11Mbps Wireless Access Point

networks@work

USER'S MANUAL

COMPEX NETPASSAGE SERIES

WP11B+

WP11B+
WP11B+
WP11B+
WP11B+

Manual number: U-0373-V1.1C

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Manual Number: U-0373-V1.1C Version 1.1, July 2003

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FCC NOTICE

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the computer and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Exposure to Radio Frequency Radiation.
To comply with the FCC RF exposure compliance requirements, the following antenna installation and device operating configurations must be satisfied:

1. For configurations using the integral antenna, the separation distance between the antenna(s) and any person’s body (including hands, wrists, feet and ankles) must be at least 2.5cm (1 inch).
2. For configurations using an approved external antenna, the separation distance between the antenna and any person’s body (including hands, wrists, feet and ankles) must be at least 20cm (8 inch).
   The transmitter shall not be collocated with other transmitters or antennas.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

FCC Compliance Statement: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Declaration of Conformity

Compex, Inc. declares the following:
Product Name: Compex 11Mbps Wireless LAN Access Point
Model No.: WP11B+ conforms to the following Product Standards:
This device complies with the Electromagnetic Compatibility Directive (89/336/EEC) issued by the Commission of the European Community.
Electromagnetic Interference (Conduction and Radiation): EN 55022 (CISPR 22)
Electromagnetic Immunity: EN 55024 (IEC61000-4-2,3,4,5,6,8,11)
Power Line Harmonics: EN 61000-3-2 (IEC610000-3-2)
Power Line Flicker: EN 61000-3-3 (IEC610000-3-3)

Therefore, this product is in conformity with the following regional standards: FCC Class B — following the provisions of FCC Part 15 directive; CE Mark — following the provisions of the EC directive.

This Class B digital apparatus complies with Canadian ICES-003.

Declaration of Conformity

Compex, Inc. declares the following:
Product Name: Compex 11Mbps Wireless LAN Access Point
Model No.: WP11B+ conforms to the following Product Standards:
This device complies with the R&TTE Directive (1999/5/EC) issued by the Commission of the European Community. Compliance with this directive implies conformity to the following European Norms (in brackets are the equivalent international standards.)
Product Safety: EN 60950 (IEC60950)
Technical requirements for radio equipment: EN 300 328-1/2
General EMC requirements for radio equipment: ETS 300 826 or ETSI EN 301 489-1/17

Therefore, this product is in conformity with the following regional standards: **FCC Class B** — following the provisions of FCC Part 15 directive; CE Mark — following the provisions of the EC directive.

This Class B digital apparatus complies with Canadian ICES-003.

5th July 2003

Shi Jia Xiang
R & D Manager

Technical Support Information

The warranty information and registration form are found in the Quick Install Guide.

For technical support, you may contact Compex or its subsidiaries. For your convenience, you may also seek technical assistance from the local distributor, or from the authorized dealer/reseller that you have purchased this product from. For technical support by email, write to support@compex.com.sg.

Refer to the table below for the nearest Technical Support Centers:

Technical Support Centers	
Contact the technical support center that services your location.	
U.S.A., Canada, Latin America and South America	
✉ Write	**Compex, Inc.** 4051 E. La Palma, Unit A Anaheim, CA 92807, USA
☎ Call 📠 Fax	Tel: +1 (714) 630-7302 (8 a.m.-5 p.m. Pacific time) Tel: +1 (800) 279-8891 (Ext.122 Technical Support) Fax: +1 (714) 630-6521 BBS: +1 (714) 630-2570 (24-hour access)
Europe	
✉ Write ☎ Call 📠 Fax	**ReadyLINK Networktechnology Gmbh** Albert Einstein Straβe 34/M21 63322 Rödermark, Germany Tel: +49 (0) 6074 - 98017 (8 a.m.-5 p.m. local time) Fax: +49 (0) 6074 - 90668 BBS: +49 (0) 6074 - 93974 (24-hour access) Support Email: readylink@compex.com.sg
Asia, Australia, New Zealand, Middle East and the rest of the World	
✉ Write	**Compex Systems Pte Ltd** 135, Joo Seng Road #08-01, PM Industrial Building Singapore 368363
☎ Call 📠 Fax	Tel: (65) 6286-1805 (8 a.m.-5 p.m. local time) Tel: (65) 6286-2086 (Ext.199 Technical Support) Fax: (65) 6283-8337 BBS: (65) 6282-8854 (24-hour access)
Internet access/	E-mail: **support@compex.com.sg** FTPsite: **ftp.compex.com.sg**
Website:	**http://www.cpx.com** *or* **http://www.compex.com.sg**

About This Document

The product described in this document, Compex NetPassage Series, Compex WP11B+ is a licensed product of Compex Systems Pte Ltd. This document contains instructions for installing, configuring and using Compex WP11B+. It also gives an overview of the key applications and the networking concepts with respect to the product.

This documentation is for both Network Administrators and end users who possess some basic knowledge of networking structures and protocols.

This document makes the assumptions that a host computer is installed with TCP/IP and is already up & running with Internet access. Procedures for Windows 98/98SE/ME/2000/XP operating systems are included in this document. However, for other operating systems, you may need to refer to your operating system's documentation for networking.

How to Use this Document

The document is written in such a way that you as a user will find it convenient to find specific information pertaining to the product. It comprises of chapters that explain in details the installation and configuration of Compex WP11B+.

Firmware

This manual is written based on Firmware version 2.91.

Conventions

In this document, special conventions are used to help and present the information clearly. The Compex 11Mbps PCMCIA Wireless LAN Access Point is often referred to as Compex WP11B+ in this document. Below is a list of conventions used throughout.

NOTE
This section will consist of important features or instructions

CAUTION
This section concerns risk of injury, system damage or loss of data

WARNING
This section concerns risk of severe injury

References on Menu Command, Push Button, Radio Button, LED and Label appear in **Bold**. For example, "Click on the "Ok" button"

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Chapter 1 Product Overview

1.1 Introduction

A wireless network is a convenient way of setting up a network both at home and in the office. The lack of a physical infrastructure, such as LAN cables, reduces the cost of implementing a network environment.

As a home user, you can enjoy the freedom to roam around your house and still maintain connection to your network. Surfing the web, sending e-mail or downloading a program while in the garden, near your swimming pool or anywhere in your house, is now a reality.

With the many benefits that a wireless network environment brings, many users are contemplating of expanding their network environment with wireless devices.

1.2 Overview

Compex WP11B+ is an easy-to-use 11Mbps Wireless LAN Access Point configurable for six operating modes, namely

- **Access Point Bridge**
- **Access Point Client**
- **Gateway**
- **Wireless Routing Client**
- **Wireless Ethernet Adapter**
- **Wireless Bridge Link**

It supports up to 11Mbps wireless communication on 2.4GHz ISM band using DSSS (Direct Sequence Spread Spectrum)

1.3 Features and Benefits

Compex WP11B+ is designed to give you a complete solution of a wireless network by establishing connection with a wireless client. The list below identifies some of the features and benefits of Compex WP11B+.

1.3.1 IEEE 802.11 Compliant

Compex WP11B+ is fully compliant with IEEE 802.11 standard. It divides the 2.4GHz license-free ISM (Industrial, Scientific & Medical) band into 14 sub channels, where the number of usable channels is subjected to local regulations of the respective country/region.

1.3.2 11Mbps High Rate Communication

Compex WP11B+ supports IEEE 802.11b high rate communication of up to 11Mbps, and it is backward compatible with the older 2Mbps and 1Mbps standard.

1.3.3 Wire Equivalent Privacy (WEP)

Compex WP11B+ uses a private encryption key to ensure data security. This is commonly referred to as Wire Equivalent Privacy (WEP). Compex WP11B+ supports 64-bit and 128-bit WEP selectable via its web-based configuration interface.

1.3.4 Wireless/Ethernet Transparent Bridging

Compex WP11B+ can be used as a Wireless Access Point functioning as a transparent Bridge between the Wireless and Ethernet segments. It shares resources for Microsoft and Novell Networks by using TCP/IP & IPX respectively as the protocol for communication.

1.3.5 Broadband Internet Sharing

Compex WP11B+ may be configured to **Gateway Mode.** This allows sharing of your broadband Internet access with your wireless clients. In addition, it supports advanced features such as Virtual servers, Time-based Access Management, IP Packet Filtering & Remote Management.

1.3.6 LAN-to-LAN Bridging

Compex WP11B+ may also be configured as an Extended Service Set (ESS) Client, working in conjunction with another ESS Access Point (AP) to function as a LAN-to-LAN Wireless Bridge.

1.3.7 Upgradeable Firmware

Compex WP11B+ is specially designed with a flash ROM that allows you to update the Compex WP11B+ with the latest firmware release via a web-based configuration interface.

1.3.8 Web-Based Interface

Compex WP11B+ is integrated with an embedded HTTP server facilitating a multi-platform web-based configuration interface that requires only a JAVA-enabled web browser.

1.4 Panel Views

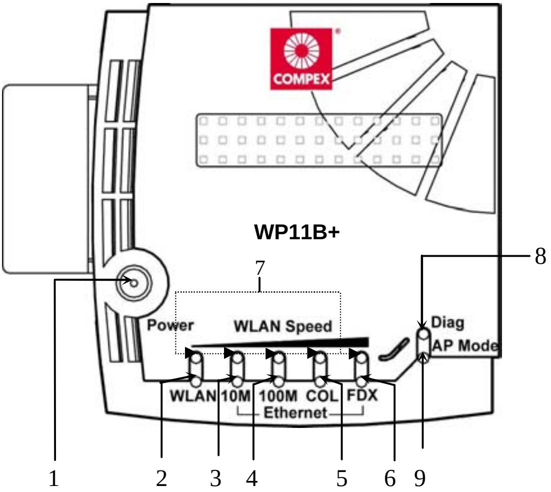


Figure 1.4a Front view of Compex WP11B+

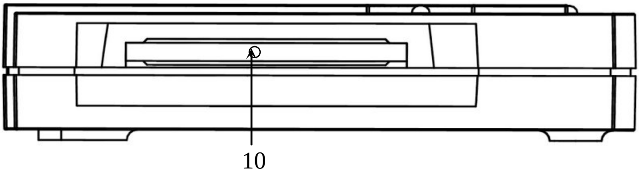


Figure 1.4b **Side view of Compex WP11B+ (Section #1)**

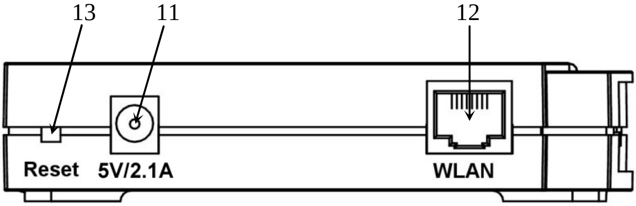
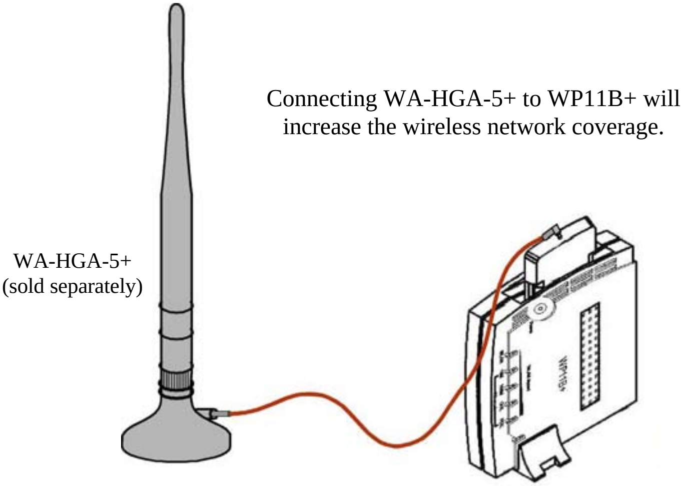


Figure 1.4c **Side view of Compex WP11B+ (Section #2)**



Connecting WA-HGA-5+ to WP11B+ will increase the wireless network coverage.

Figure 1.4d Connection to indoor antenna

1.5 Panel Description

	Indicator	Description
1	Power LED	*Steady Green Light* Power is supplied to Compex WP11B+.
2	WLAN LED	*Steady Green Light* A link is connected. *Flashing Green Light* An activity is going on.
3	10M LED	*Steady Green Light* LAN connecting at 10Mbps.
4	100M LED	*Steady Green Light* LAN connecting at 100Mbps.
5	COL LED	*Steady Green Light* Collision occurs at the network segment.
6	FDX LED	*Steady Green Light* Network is in Full Duplex Mode. *No Light* Network is in Half Duplex Mode.
7	WLAN Speed LED Total 5 LEDs	*Steady Green Light* More LEDs lighting up indicate a higher speed of data transmission.
8	DIAG LED	*Steady Green Light* Compex WP11B+ is booting and loading firmware. *Flashing Green Light* Firmware is corrupted. *No Light* Firmware has been completely downloaded onto the Compex WP11B+. The device is connected to the network.

	Indicator	Description
9	AP Mode LED	*Steady Green Light* The device is in AP Bridge Mode or AP Client Mode. *No Light* The device is in Gateway mode.
10	Wireless Interface	Built-in 11Mbps Wireless LAN PCMCIA Card to support wireless client.
11	5V DC/2.1A	Accepts 5V DC/2.1A input.
12	RJ45 Ethernet Port	10Base-T or 100-Base-TX Port connects to cable modem or DSL modem.
13	Reset Button	Compex WP11B+ will reboot the device, set to default setting or switch between the selections of work mode. For more details please refer to **"Hardware Reset of Compex WP11B+"**.

CAUTION

Do not remove the wireless Interface Card from Compex WP11B+.

1.6 Technical Specifications

Items	Specifications
Industry Standards	• IEEE 802.3 10Base-T; • IEEE 802.3u 100Base-TX; • IEEE 802.11 DSSS; • IEEE 802.11b High Rate; • IEEE 802.1d LAN Bridging • IEEE 802.1x Port-Based Authentication
Safety Certifications	CE Mark, FCC Class B, Gost, C-Tick, UL
Radio Technology	Direct Sequence Spread Spectrum (DSSS)
Frequency Band	• 2400 ~ 2483.5MHz (USA, Canada) • 2400 ~ 2497MHz (Europe, Asia)
Data Rate	• CCK - 11Mbps, 5.5Mbps • DQPSK - 2Mbps • DBPSK - 1Mbps
Private Encryption	64-bit or 128-bit WEP (selectable)
Operating Mode	Access Point Bridge Access Point Client Gateway Wireless Routing Client Wireless Ethernet Adapter Wireless Bridge Link
AP Mode WAN Interface Supported Protocol Wireless Pseudo VLAN Function	 RJ45 10/100Mbps port IP, IPX, NetBEUI Per Node & Per Group Wireless to Ethernet Bridging
Client Mode WAN Interface Supported Protocol Function	 RJ45 10/100Mbps port IP, IPX Ethernet to Ethernet Wireless Bridging
Firmware Upgrade	Yes
Antenna	Diversity PCB Micro Strip Antenna

Items	Specifications
Roaming	Unrestricted client roaming across multiple access points
Media Access Method	Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)
Gateway Mode (Selectable)	
Wired Interface	RJ45 10/100Mbps port
Wireless Pseudo VLAN	Per Node & Per Group
Private Subnet	All Classful/Classless subnet
Built-In DHCP Server	Yes (with DHCP reservation)
Virtual Server	Port Forwarding and IP Forwarding
Time-based Access Control	Yes
IP Packet Filtering	Yes
Router’s Clock	Yes
Configuration Interface	Web-based & TELNET Command Console
Remote Router Management	Via HTTP or TELNET session
Operating Channels	11 channels (USA and Canada) 13 channels (Europe, Asia and other parts of the world) 14 channels (Japan)
Dimension (L x W x H)	122mm x 119mm x 22mm (L x W x H)
Management Protocol	SNMP Version 1 and 2
Environmental Requirement	
Temperature	Operating: 0°C to 40°C Storage: -20°C to 70°C
Humidity	Operating: 10%RH to 80%RH Storage: 5%RH to 90%RH

Chapter 2 Getting Started

This chapter outlines the basic requirements before you begin any installation and configuration of Compex WP11B+.

2.1 Package Content

Thank you for purchasing Compex WP11B+. The package should contain the following:

- Compex WP11B+ unit
- Compex WP11B+ switching Power Adapter
- Quick Install Guide with warranty registration
- CD User’s Manual with Utility Configuration Software
- Clip holder stand
- Wall-Mounting Template
- Cross RJ-45 cable

2.2 Setup Considerations

The following are the setup considerations you need to take note of before connecting the Compex WP11B+ to your network:

2.2.1 Software requirements

- Windows 98/98SE/ME/NT/2000/XP
- Web Browser – Microsoft IE V4.0 or higher, Netscape Communicator V4.06 or higher
- 2 MB of hard disk space
- Check your LAN configurations and IP addresses. Confirm whether they are Dynamic or Static IP addressing

2.2.2 Hardware requirements

- PCs attached with wireless devices
- Ethernet-ready PC with TCP/IP protocol installed & configured for Internet access
- RJ-45 cable

Chapter 3 Hardware Installation

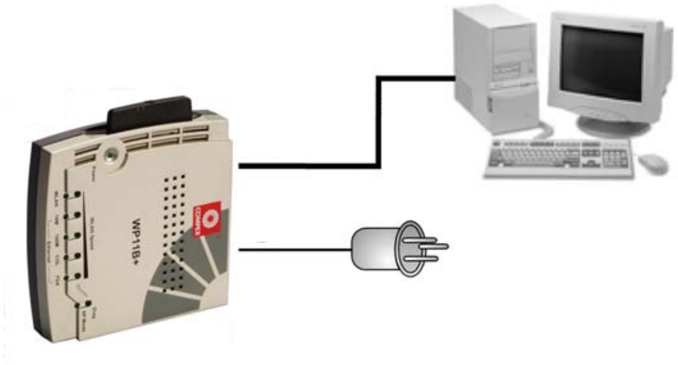
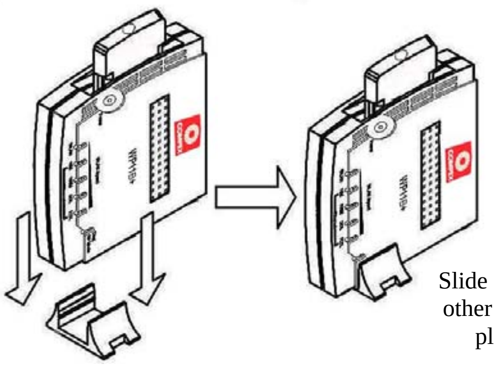


Figure 3a Compex WP11B+ Connections

To begin setting up the Compex WP11B+, please follow the steps listed below:

1. Snap the Compex WP11B+ onto the clip holder stand as shown in Figure 3b.



Slide it into the slot of the other clip holder stand to place side by side.

Clip it directly onto the ventilation hole located at the back of the device.

Figure 3b Illustration on using Clip holder Stand

2. Place the Compex WP11B+ in a well ventilated area.
3. Place the device in a standing position.
4. Connect your PC to the Ethernet port of Compex WP11B+ using an MDIX UTP RJ45 cable. Please note that before your PC can access to the Internet, the NIC adapter and TCP/IP protocol have to be installed and configured first.
5. Plug the AC power adapter. Please use only the correct power adapter supplied by Compex.
6. Check if the power LED is lighted up.

Chapter 4 Software Configuration

After setting up the hardware, install a browser on the PC or workstation. Make sure that the TCP/IP protocol is installed and configured for Internet access. Please refer to Appendix II.

4.1 Login into Web-based Interface

Compex has developed an utility configuration software, **uConfig**, that provides hassle-free access to the web-based configuration interface. The uniqueness of this program is that it does not require any alteration to the TCP/IP configuration on your computer.

Connect the WP11B+ to your computer via a crossover UTP cable.

As pre-configuration of TCP/IP is not required, you just simply activate the program to get to the configuration page.

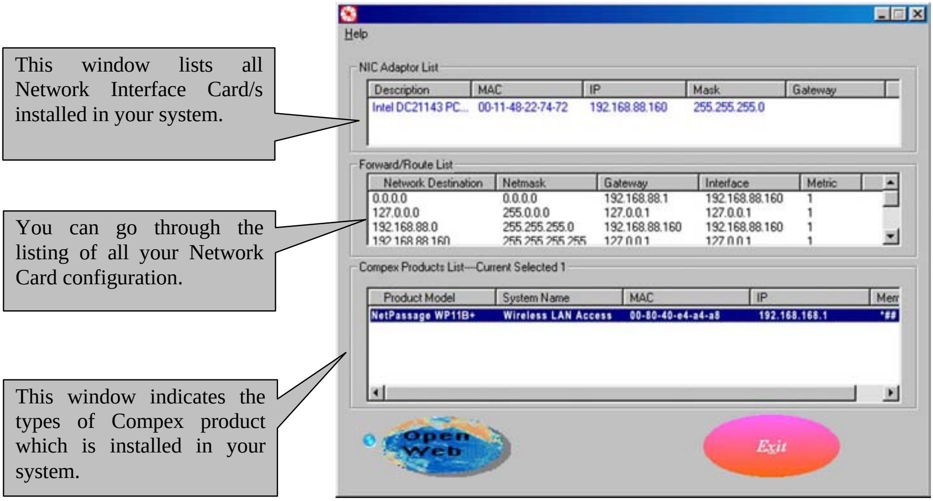
To login into Compex WP11B+'s web-based interface,

1. Insert the Product CD provided into your CD-ROM. This will automatically open up the Welcome Page.

2. Click on the **Drivers** and **Utilities** option and select **uConfig** program.

NOTE
In the event that the program cannot be found, please explore this directory path, **X:\utility**\ (where **X** is the CD-ROM drive) to access the program.

This will automatically launch the program and you will be greeted with the **uConfig** application page as shown in Figure 4.1a.



NIC Adaptor List

Description	MAC	IP	Mask	Gateway
Intel DC21143 PC...	00-11-48-22-74-72	192.168.88.160	255.255.255.0	

Forward/Route List

Network Destination	Netmask	Gateway	Interface	Metric
0.0.0.0	0.0.0.0	192.168.88.1	192.168.88.160	1
127.0.0.0	255.0.0.0	127.0.0.1	127.0.0.1	1
192.168.88.0	255.255.255.0	192.168.88.160	192.168.88.160	1
192.168.88.160	255.255.255.255	127.0.0.1	127.0.0.1	1

Compex Products List---Current Selected 1

Product Model	System Name	MAC	IP	Mem
NetPassage WP11B+	Wireless LAN Access	00-80-40-e4-a4-a8	192.168.168.1	*##

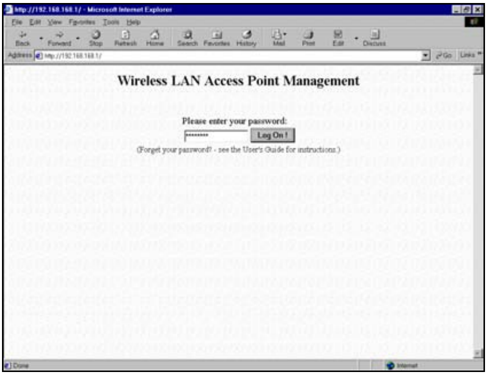
This window lists all Network Interface Card/s installed in your system.

You can go through the listing of all your Network Card configuration.

This window indicates the types of Compex product which is installed in your system.

Figure 4.1a Utility Configuration GUI

3. Click on the “OpenWeb” button and the system will automatically link you to Compex WP11B+’s authentication page as shown in Figure 4.1b.


http://192.168.168.1/ - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Forward
Stop
Refresh
Home
Search
Favorites
History
Mail
Print
Edit
Discuss
Address http://192.168.168.1/
Go
Links
Log On !
Done
Internet

Wireless LAN Access Point Management

Please enter your password:

****

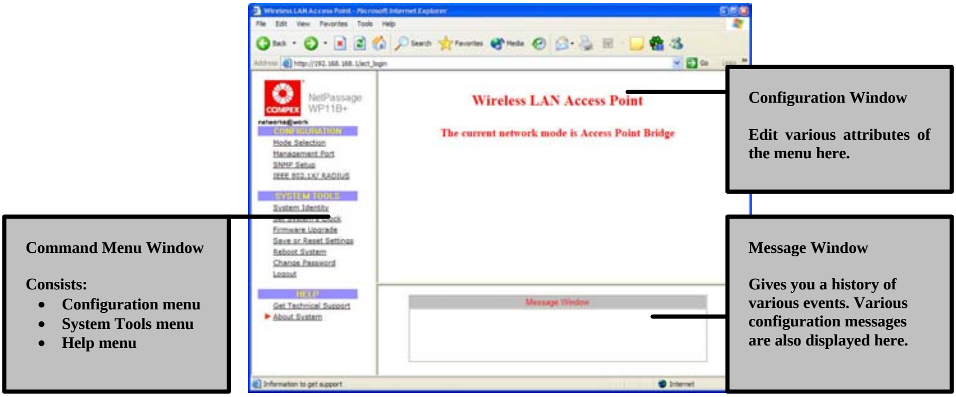
(Forget your password? - see the User's Guide for instructions.)

Figure 4.1b Log in to Compex WP11B+

4. Click on the “Log ON!’ button to access the web based configuration interface of the Compex WP11B+.

The default password for the login configuration interface is ***password***. You will be able to change the login password which will be elaborated in **“Change Password”** section.

The main menu screen will be displayed as shown in Figure 4.1c.



The current network mode is Access Point Bridge

Configuration Window

Edit various attributes of the menu here.

Command Menu Window

Consists:

- **Configuration menu**
- **System Tools menu**
- **Help menu**

Message Window

Gives you a history of various events. Various configuration messages are also displayed here.

Figure 4.1c Compex WP11B+ Configuration Interface

From here, you will able to see three different window frames on the screen, namely **Command Menu Window, Configuration Window and Message Window**.

You will see a listing of the functions stated in the Command Menu Window. The functions will vary according to the mode which you have selected. Different modes will provide different functions in the Command Menu Window.

Chapter 4 Software Configuration

4.1.1 AP Bridge and AP Client Mode

Exit uConfig Mode menu – End the Utility Configuration Program

- ExitUconfig

CONFIGURATION menu – Basic Ethernet and Wireless setup

- Mode Selection
- Management Port
- SNMP Setup
- IEEE 802.1X / RADIUS

SYSTEM TOOLS menu –Edit various internal settings of Compex WP11B+

- System Identity
- Set System's Clock
- Firmware Update
- Save or Reset Settings
- Reboot System
- Change Password
- Logout

HELP menu – Contact information of a technical support engineer

- Get Technical Support
- About System

4.1.2 Gateway and Wireless Routing Client Mode

Exit uConfig Mode menu

- ExituConfig

CONFIGURATION menu

- Mode Selection
- uConfig IP Setup (Gateway Mode)
- Management Port
- WAN Setup
- NAT
- Routing
- IP Filtering
- SNMP Setup
- Remote Management

SYSTEM TOOLS menu

- System Identity
- Set System's Clock
- Firmware Update
- Save or Reset Settings
- Reboot System
- Change Password
- Logout

HELP menu

- Get Technical Support
- About System

4.1.3 Wireless Ethernet Adapter Mode

Exit uConfig Mode menu – End the Utility Configuration Program

- ExituConfig

CONFIGURATION menu – Basic Ethernet and Wireless setup

- Mode Selection
- Management Port
- SNMP Setup

SYSTEM TOOLS menu –Edit various internal settings of Compex WP11B+

- System Identity
- Set System's Clock
- Firmware Update
- Save or Reset Settings
- Reboot System
- Change Password
- Logout

HELP menu – Contact information of a technical support engineer

- Get Technical Support
- About System

4.1.4 Wireless Bridge Link Mode

Exit uConfig Mode menu – End the Utility Configuration Program

- ExituConfig

CONFIGURATION menu – Basic Ethernet and Wireless setup

- Mode Selection
- Management Port
- SNMP Setup

SYSTEM TOOLS menu –Edit various internal settings of Compex WP11B+

- System Identity
- Set System’s Clock
- Firmware Update
- Save or Reset Settings
- Reboot System
- Change Password
- Logout

HELP menu – Contact information of a technical support engineer

- Get Technical Support
- About System

With this user-friendly web based configuration interface, all configurations on the Compex WP11B+ can now easily be achieved, allowing you to configure your network promptly.

Chapter 5 Basic Configuration for Compex WP11B+

This chapter explains the Configuration Menu tool of Compex WP11B+ the web-based configuration interface. To communicate with the network, DHCP Gateway IP Address should be common to the AP Client. Settings for network parameters depend on the configuration of your individual network.

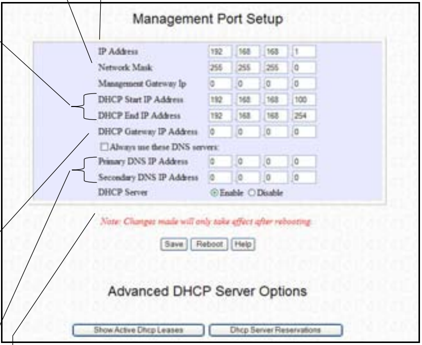
Network Mask
Network Mask identifies the class of the Gateway's IP address. The users may configure the network with Class A (255.0.0.0) and Class B (255.255.0.0) Network Mask as well. In addition, Compex WP11B+ can be configured for Classless Subnet to support certain application.

DHCP Start/End IP Address
These parameters specify the range of the IP address of which the DHCP Server will assign. For example, if the DHCP Start IP Address and DHCP End IP Address are 192.168.168.100 and 192.168.168.200 respectively, the first IP address that the DHCP Server releases will be 192.168.168.100 while the last IP address that it will release is 192.168.168.200.

DHCP Gateway IP Address
The DHCP Server will automatically assigned a Gateway IP Address when the PC is connected in the same network.

Primary/Secondary DNS IP Address
Domain Name Service is an Internet service that translates domain names into IP addresses. If your WAN connection is using Static IP, you should configure the primary and secondary DNS IP addresses with the DNS information provided by your Broadband Internet Service Provider. For other WAN connection types, the DNS IP addresses are obtained automatically from ISP. The **Always use these DNS servers** checkbox can be used to disable the automatic process, and your preferred DNS IP addresses can be used.

IP Address
IP address uniquely identifies the Gateway in the network. whereby the users should point their Internet gateway to, if fixed IP addresses are configured on the computers in the network.



Management Port Setup

IP Address 192 168 168 1
Network Mask 255 255 255 0
Management Gateway Ip 0 0 0 0
DHCP Start IP Address 192 168 168 100
DHCP End IP Address 192 168 168 254
DHCP Gateway IP Address 0 0 0 0
☐ Always use these DNS servers:
Primary DNS IP Address 0 0 0 0
Secondary DNS IP Address 0 0 0 0
DHCP Server ● Enable ○ Disable

Note: Changes made will only take affect after rebooting

DHCP Server
Dynamic Host Configuration Protocol Server dynamically assigns IP addresses to the computers connected in the same network. If a computer has been configured to dynamically obtain IP address, the DHCP Server will release an available IP address beginning from the DHCP Start IP Address to the computer. If you have set the TCP/IP protocol of your PC to dynamic IP address, the built-in DHCP server will assign the **DHCP Start IP Address** and **DHCP End IP Address** automatically to the PCs connected in the same network. For dynamic WAN IP, the **DNS IP address** is obtained automatically from the ISP.

Figure 5.1a Management Port Setup Interface

Chapter 5 Basic Configuration for Compex WP11B+

5.1 Changing the IP Address of Compex WP11B+

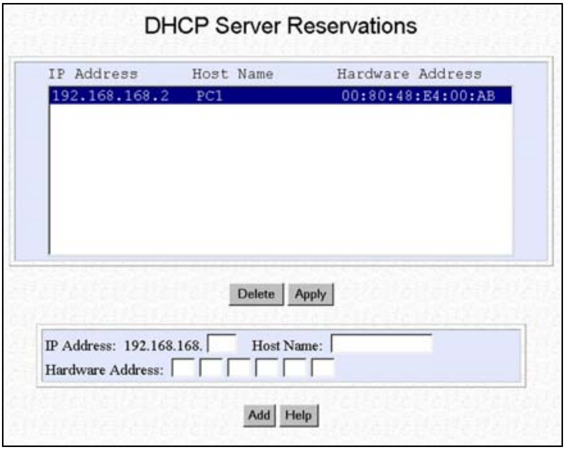
You can also assign a specific IP address to the Compex WP11B+. To change the IP address,

1. Enter the new IP address in **IP Address** entry.
2. Click “Save” button and reboot the device to update the configurations.
3. Logon again using your new IP Address to avoid connection with an incorrect profile.

5.2 Configuring DHCP Server

You may configure the built-in DHCP Server of the Compex WP11B+ to release a specific IP address to a specific computer via the web-based configuration interface. You may also view the IP releases online.

The DHCP Server can also be configured to reserve specific IP address for specific host or Mac address.



DHCP Server Reservations

IP Address	Host Name	Hardware Address
192.168.168.2	PC1	00:80:48:E4:00:AB

IP Address: 192.168.168. Host Name:
Hardware Address:

Figure 5.2a **DHCP Reservations of IP Address**

CAUTION
The reserved IP address to be assigned should NOT have the same Dynamic IP address range as the DHCP Start and End IP address.

To reserve a certain IP address for a specific workstation

1. Click on “DHCP Server Reservations” button in the Management Port Setup Menu.
2. Enter the specific IP address to be assigned to your designated PC.
3. Assign a name for the Host of the designated PC.
4. Fill in the MAC address of the designated PC in the **Hardware Address** entry.

NOTE
The DHCP server will ignore the Host Name if it finds a match in the Hardware Address. It checks the Hardware Address first, so you need only to enter either the Host Name or Hardware Address.

To add an entry

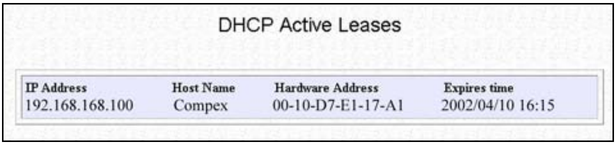
1. Click “Add” button to create an entry into the **DHCP Server Reservations**.
2. After the address is entered, click “Apply” button to make the updates effective.

You need to **reboot** and **logon WP11B+** again to activate the changes.

NOTE
The reserved IP address must not be within the range of DHCP start and end IP addresses.

To view the IP released by the DHCP Server

1. Press the **Show Active DHCP Leases** button in the LAN Setup window shown in Figure 5.1a. The list of released IP addresses will be displayed, as shown in Figure 5.2b.


DHCP Active Leases

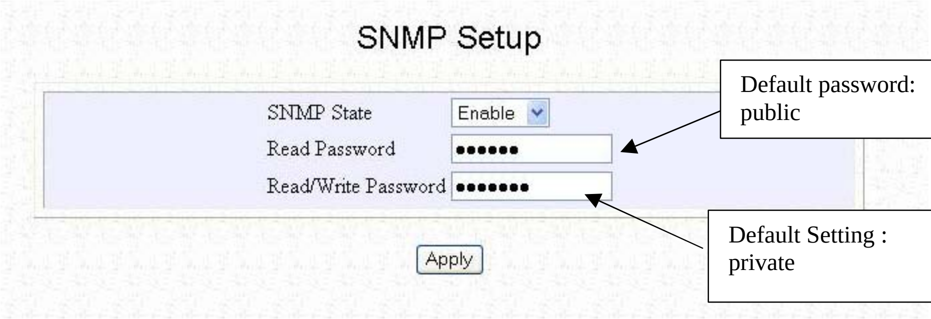
IP Address	Host Name	Hardware Address	Expires time
192.168.168.100	Compex	00-10-D7-E1-17-A1	2002/04/10 16:15

Figure 5.2b Show DHCP Leases

NOTE
Invalid date and time shown under **Expires** column indicates that the router's clock of your Compex WP11B+ has not been set. Refer to section on **"Set System Time"** to set the system's clock.

Chapter 6 SNMP Settings

Simple Network Management Protocol (SNMP) is a de facto standard for internet work management. Because it is a simple solution, requiring little code to implement, vendors can easily build SNMP agents to their products. SNMP is extensible, allowing vendors to easily add network management functions to their existing products. SNMP also separates the management architecture from the architecture of the hardware devices, which broadens the base of multivendor support.



SNMP Setup

SNMP State: Enable

Read Password: ••••••

Read/Write Password: •••••••

Default password: public

Default Setting : private

Figure 6.1a SNMP Setup

Click on Apply to activate changes.

Chapter 7 Setting up of Wireless Per Group Pseudo LAN using AP Bridge Mode

With more wireless networks being deployed in public premises, privacy protection against unknown users has been an increasingly grave concern. The Wireless Pseudo VLAN segregates each wireless client or group of wireless clients into its own Pseudo VLAN. This restricts communication between wireless clients of different Pseudo VLAN while retaining wireless accessibility to the network resources.

The subnet view illustrates Pseudo Group 1, Group 2 and Group 3 not only can surf the Net freely, but they also can access the server easily. The PCs within its own group will be able to communicate with one another. However, communications between Group 1, Group 2 and Group 3 are not permissible.

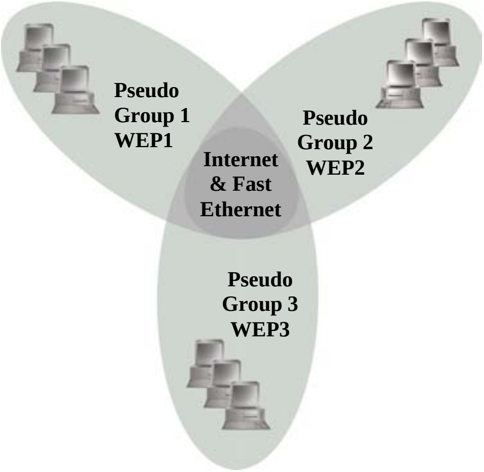


Figure 7.1a Per Group Pseudo VLAN Subnet View

Chapter 7 Setting up of Wireless Per Group Pseudo LAN using AP Bridge Mode

The physical setup of Per Group Pseudo VLAN is illustrated as shown.

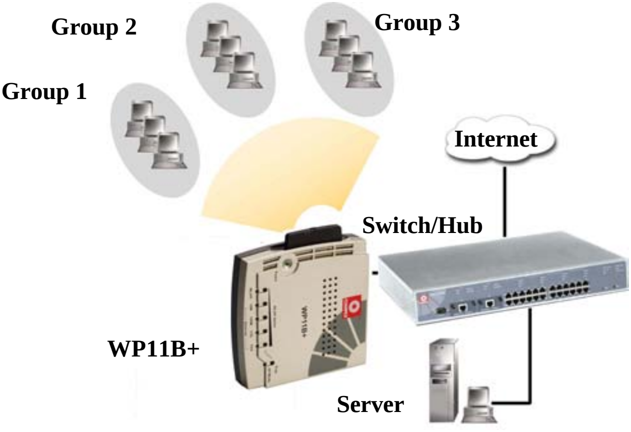
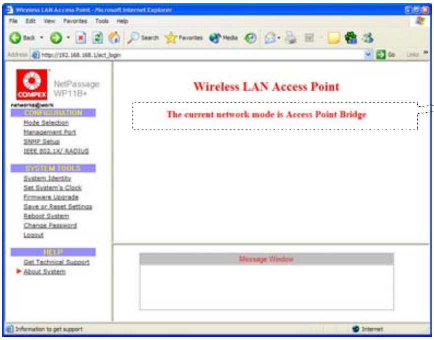


Figure 7.1b Physical Setup for Wireless to Ethernet Bridging

7.1 Adding a client from the Pseudo Group

The default mode for Compex WP11B+ is in AP Bridge, therefore no further configuration is required.

1. Activate **uConfig** program. Click on “OpenWeb” button. You are now in the default web page of Compex WP11B+.



Wireless LAN Access Point

The current network mode is Access Point Bridge

The device is in AP Bridge Mode.

Figure 7.1a Device in AP Bridge Mode

2. Click “Apply” button from the **Network Mode Setup** GUI and the web page for Access Point Setup as shown in Figure 7.1b will appear.

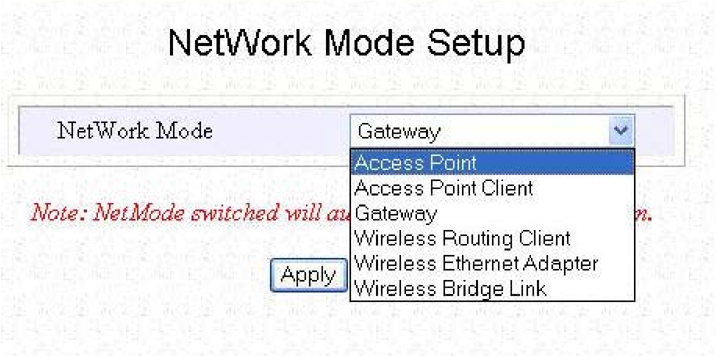


Figure 7.1b Selection of Network Mode

3. Enter the **Access Point Setup** parameters for your network. An example is shown in Figure 7.1c with these parameters entered.

   Example:
   Country: United States-US
   Access Point Name: WP11B+
   ESSID: Any
   Channel: 3
   TX Rate: Fully Auto
   RTS Threshold: 2432
   Frag Threshold: 2346
   Access Control: Disable
   WEP encryption method: Disable

Chapter 7 Setting up of Wireless Per Group Pseudo LAN using AP Bridge Mode

ESSID
This is an identifier that the devices use to associate with the access point. It helps to distinguish between multiple wireless networks in the same vicinity.

Channel
The DSSS technology divides the 2.4GHz band into 14 frequency channels. As mentioned earlier, this is dependent on the country's regulation.

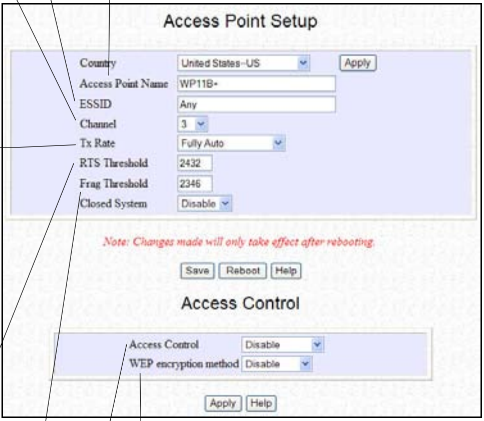
Tx Rate
When fully auto is selected, Compex WP11B+ will automatically adjust the transfer rate to the link strength. If the link is weak, the transfer rate will be adjusted from 11 to 5.5 to 2 to 1 Mbps. You can also fix the transfer rate at 11, 5.5, 2 or 1 Mbps. For fixed rate, once the transfer rate cannot be reached, the link will be disconnected.

RTS Threshold
The RTS Threshold limits the length of the RTS frame that is used to initiate a transmission. Please do not change this field unless you are familiar with IEEE 802.11 standard.

Frag Threshold
Fragment Threshold limits the maximum frame to be transmitted. Please do not change this field unless you are familiar with IEEE 802.11 standard.

Access Control
Access Control allows you to set up Pseudo VLAN for wireless clients to have the capability to communicate with one another, or set as Per Node (maximum of 10 nodes) or Tag VLAN which extends Pseudo VLAN feature to the wired network.

Access Point Name
If you have a few wireless access points in your LAN, it will be good that you give a name so that it will be easier to identify the various access points.



Country: United States-US
Access Point Name: WP11B+
ESSID: Any
Channel: 3
Tx Rate: Fully Auto
RTS Threshold: 2432
Frag Threshold: 2346
Closed System: Disable

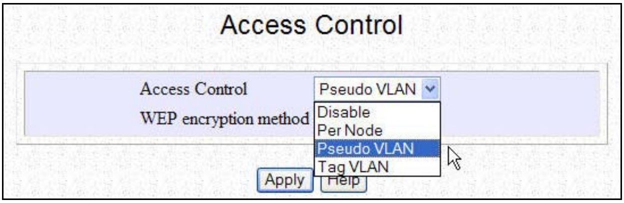
Note: Changes made will only take effect after rebooting.

Access Control: Disable
WEP encryption method: Disable

WEP Encryption Method
If the WEP encryption is enabled, only devices with the same encryption key can communicate with each other.

Figure 7.1c Access Point Setup Elaboration of Compex WP11B+

4. Select **Pseudo VLAN** in the Access Control pull-down menu as shown below and click the "Apply" button.

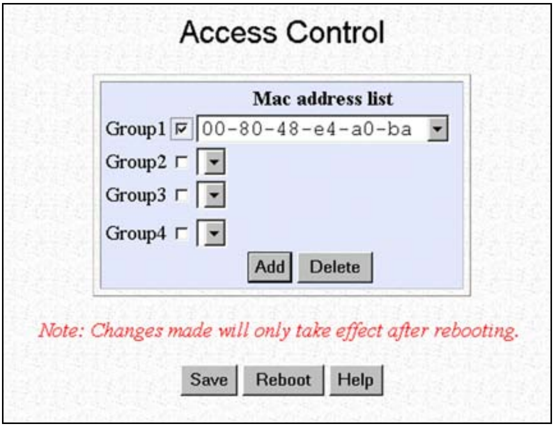


Access Control

Access Control: Pseudo VLAN

Figure 7.1d Defining Access Control

5. Add in the MAC Address of those wireless clients into the various groups. For the example illustrated in Figure 7.1e, you need to add in the MAC Addresses for the three groups of wireless clients.



Access Control

Mac address list

Group1 ☑ 00-80-48-e4-a0-ba

Group2 ☐

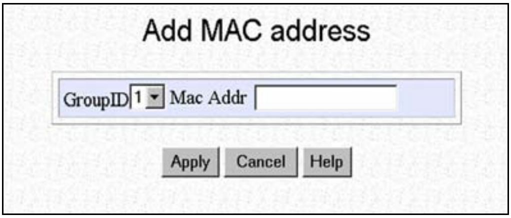
Group3 ☐

Group4 ☐

Note: Changes made will only take effect after rebooting.

Figure 7.1e Defining Pseudo VLAN using MAC address

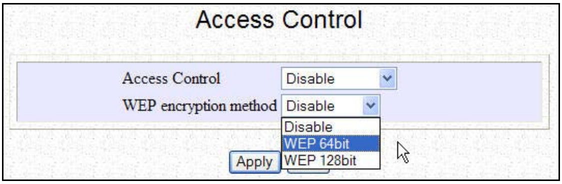
6. Click “Add” button. Choose your GroupID and key in the client’s MAC address as shown below. Click on “Apply” button as shown in Figure 7.1f.


Add MAC address

GroupID 1 Mac Addr

Figure 7.1f Adding MAC address

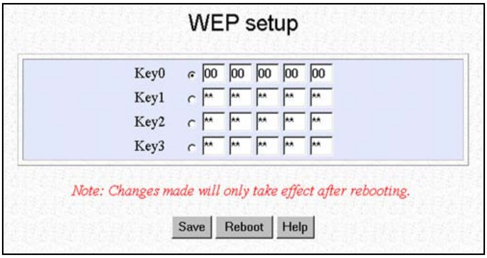
7. Next, you have the option to choose either 64-bits or 128-bits WEP Encryption. Select your option and click the “Apply” button.


Access Control

Access Control: Disable
WEP encryption method: Disable

Figure 7.1g Selecting WEP encryption method

8. For **64-bit WEP encryption**, you may enter 10 hexadecimals into the individual Key.


WEP setup

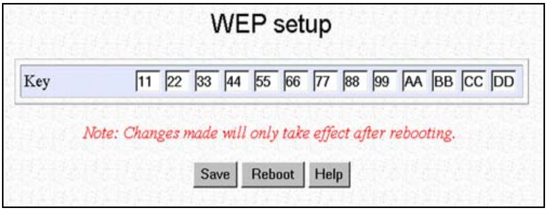
Key0 ● 00 00 00 00 00
Key1 ○ ** ** ** ** **
Key2 ○ ** ** ** ** **
Key3 ○ ** ** ** ** **

Note: Changes made will only take effect after rebooting.

Figure 7.1h Defining the key for 64-bit WEP

NOTE
You can store up to 4 Encryption keys in Compex WP11B+. However, only one key can be used at anytime.

For **128-bit WEP encryption**, enter your 26 hexadecimal encryption key and click on the “Save” button. Reboot the device.



Key 11 22 33 44 55 66 77 88 99 AA BB CC DD

Note: Changes made will only take effect after rebooting.

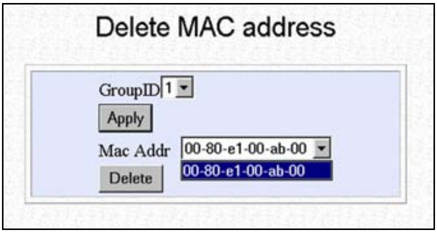
Figure 7.1i Defining the key for 128 bit WEP

9. Click on the “Save” button and then reboot Compex WP11B+ for the changes to take effect.

7.2 Delete a client from the Pseudo Group

If you want to delete any of the unnecessary MAC Addresses,

1. Select the **GroupID** and click on the “Apply” button.
2. Highlight the MAC address of the client which you want to delete and click on the “Delete” button.



GroupID 1

Mac Addr 00-80-e1-00-ab-00

00-80-e1-00-ab-00

Figure 7.2a Delete MAC Address of a client

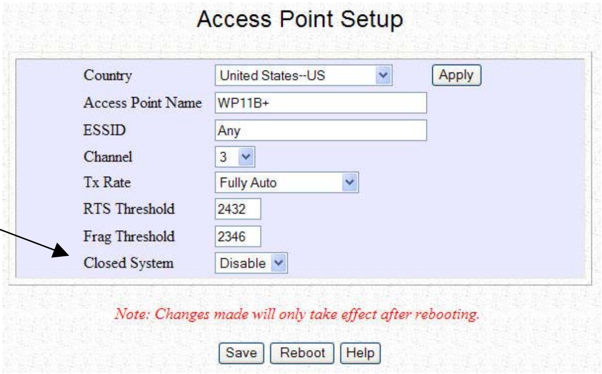
You can also have a combination of encryption settings in each Access Control setting. The combinations can be summarized in the table below:

No.	Access Control	WEP encryption method
1	Disable	Disable
2	Disable	64 bit
3	Disable	128 bit
4	Per node	Disable
5	Per node	64 bit
6	Per node	128 bit
7	Pseudo VLAN	Disable
8	Pseudo VLAN	64 bit
9	Pseudo VLAN	128 bit

For combination settings, the methods to key in the fields are the same.

7.3 Closed System

When Closed System is enabled, the AP will not broadcast its SSID. Thus, the wireless card user running a site survey utility will not discover the AP. This provides an added security since the wireless card user must enter the correct AP SSID name to access and connect with the AP.



Closed System

Access Point Setup

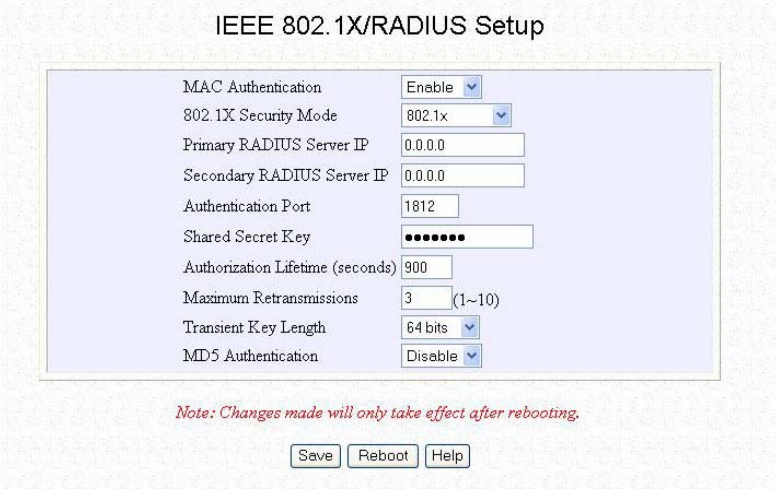
Country	United States--US
Access Point Name	WP11B+
ESSID	Any
Channel	3
Tx Rate	Fully Auto
RTS Threshold	2432
Frag Threshold	2346
Closed System	Disable

Note: Changes made will only take effect after rebooting.

Figure 7.3a Closed system

7.4 IEEE 802.1X/RADIUS Setup

The advent of wireless technology has also raised certain security issues. With the new IEEE 802.1x security mode, users can ensure of a better wireless security. IEEE 802.1x provides precise access control and identification which allows a wide variety of services to be offered. And thanks to the security protocols used in the 802.1X standard, you can use your networks with a higher level of confidence in their security than even wired connections can offer.



IEEE 802.1X/RADIUS Setup

MAC Authentication	Enable
802.1X Security Mode	802.1x
Primary RADIUS Server IP	0.0.0.0
Secondary RADIUS Server IP	0.0.0.0
Authentication Port	1812
Shared Secret Key	●●●●●●●
Authorization Lifetime (seconds)	900
Maximum Retransmissions	3 (1~10)
Transient Key Length	64 bits
MD5 Authentication	Disable

Note: Changes made will only take effect after rebooting.

Figure 7.4a IEEE 802.1X/RADIUS Setup

MAC authentication

If enabled, client mac address must be authenticated before it can access resource. It can be combined with dot1x mode. And if both enabled, mac authentication must be authenticated before dot1x authentication starts.

802.1X Security Mode

You have three choices:

- **None** Disable 802.1x Security Mode, and use only WEP encrypton.
- **802.1X** Enable the 802.1x Security. In this mode, WEP key is not required, since this mode creates keys dynamically.
- **Mixed Mode** 802.1x with WEP. In this mode, the actual security of the whole cell is degraded into normal WEP level. You must provide WEP key from WEP tab entry and can only use key index 0.

Primary RADIUS Server IP

The IP address of the RADIUS server that is using for the authentication purpose.

Authentication Port

The RADIUS authentication port. The default is 1812 which must match the port that RADIUS server is using for the same purpose.

Shared Secret Key

The RADIUS shared secret key is used to validate RADIUS communications between clients and servers. The shared secret for the user on the RADIUS server must be the same as the shared secret key. The shared secret may be any alphanumeric string and case-sensitive. The default password is **private**.

Authentication Lifetime (seconds)

The interval each client session may be active before being automatically re-authenticated.

Maximum Retransmissions

The maximum number of times an authentication may be retransmitted.

Transient Key Length

In **802.1X** or **Mixed Mode**, you must choose suitable key length (**64 bits, 128 bits**). In **Mixed Mode**, you also need to set up WEP key in WEP key entry.

MD5 authentication

Because EAP-MD5 authenticattion doesn't generate WEP key, you must input static WEP key if you enable MD5 authentication. By default, it is disabled.

Click on [Save] to save the settings but you must reboot in order for the settings to take effect.

Chapter 8 Setting up of Wireless LAN-to-LAN Bridge Network using AP Client Mode

Compex WP11B+ may be configured as a wireless client, functioning in conjunction with another IEEE 802.11b-compliant Access Point to perform transparent Bridging between two Fast Ethernet networks.

The following physical layout of a Wireless LAN-to-LAN Bridge shows Compex WP11B+ functioning as an ESS Client, performing Fast Ethernet LAN-to-LAN Bridging by accessing an ESS Access Point.

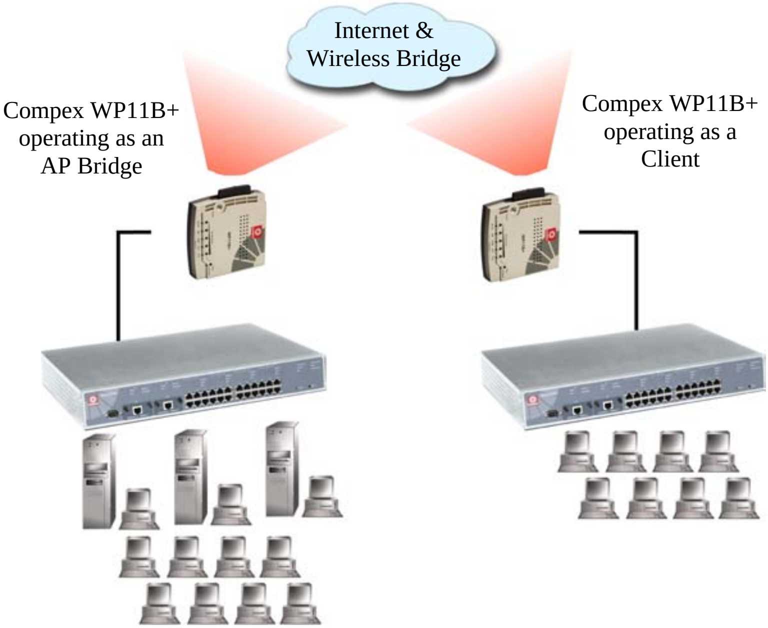


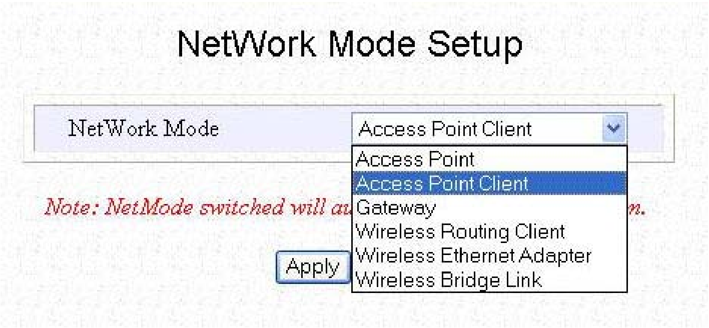
Figure 8.1a Physical setup of Wireless LAN-to-LAN Bridge

Chapter 8 Setting up of Wireless LAN-to-LAN Bridge Network using AP Client Mode

With Compex WP11B+ in its default setting,

7. Activate **uConfig** program, click on the “OpenWeb” button.

8. Go to the **CONFIGURATION** menu and click on **Mode Selection**. In the **Network Mode Setup**, select **Access Point Client** as shown in Figure 8.1b.



NetWork Mode Setup

NetWork Mode: Access Point Client

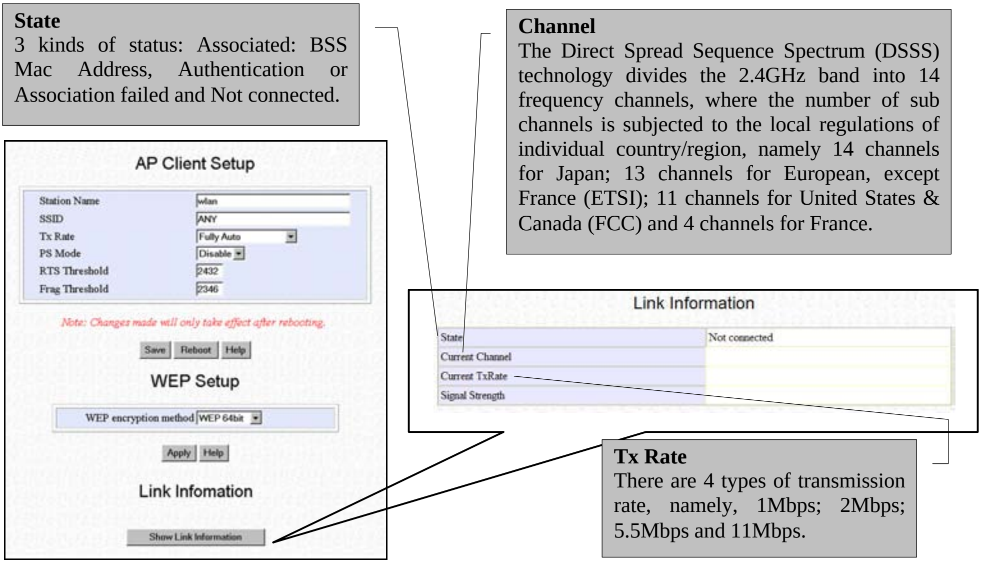
Figure 8.1b Selection of Network Mode

9. Click on the “Apply” button. The system will prompt you to reboot your system.

10. Go to **uConfig** program and wait for the system to refresh the screen. Click on the “OpenWeb” button to proceed. The system will lead you to the authentication page again. Logon again and Compex WP11B+ will be in AP Client Mode.

11. Go to “Mode Selection”. Click on the “Apply” button again. This time, the web page for **AP Client Setup** will appear.

12. Enter the parameters as shown in Figure 8.1c.



State
3 kinds of status: Associated: BSS Mac Address, Authentication or Association failed and Not connected.

Channel
The Direct Spread Sequence Spectrum (DSSS) technology divides the 2.4GHz band into 14 frequency channels, where the number of sub channels is subjected to the local regulations of individual country/region, namely 14 channels for Japan; 13 channels for European, except France (ETSI); 11 channels for United States & Canada (FCC) and 4 channels for France.

AP Client Setup

Station Name: wlan
SSID: ANY
Tx Rate: Fully Auto
PS Mode: Disable
RTS Threshold: 2432
Frag Threshold: 2346

Note: Changes made will only take effect after rebooting.

WEP Setup

WEP encryption method: WEP 64bit

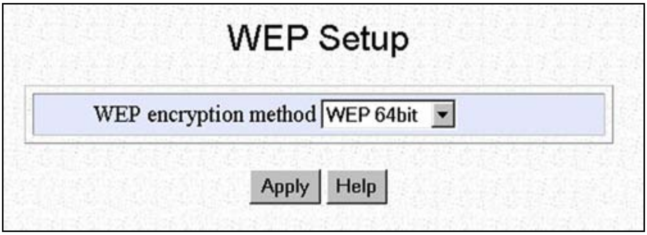
Link Information

State	Not connected
Current Channel	
Current TxRate	
Signal Strength	

Tx Rate
There are 4 types of transmission rate, namely, 1Mbps; 2Mbps; 5.5Mbps and 11Mbps.

Figure 8.1c Access Point Client Setup

13. Next, you have the option to choose either 64-bit or 128-bit for WEP Encryption from the **WEP Setup** as shown below. Select your option and click on the “Apply” button.

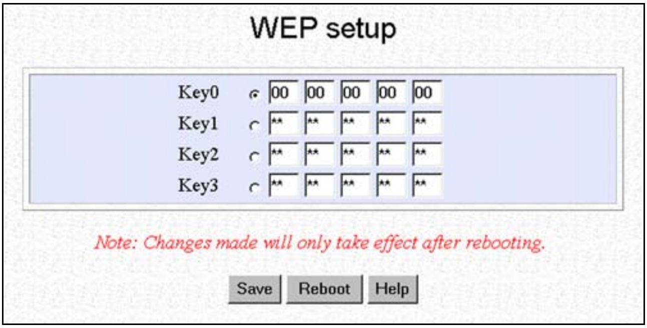


WEP Setup

WEP encryption method: WEP 64bit

Figure 8.1d Selecting WEP encryption method

14. Enter your encryption key. The parameters take in hexadecimals.



WEP setup

Key0 ● 00 00 00 00 00

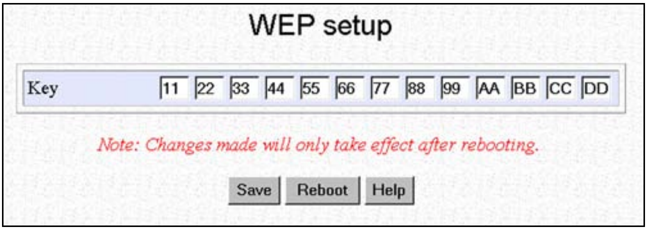
Key1 ○ ** ** ** ** **

Key2 ○ ** ** ** ** **

Key3 ○ ** ** ** ** **

Note: Changes made will only take effect after rebooting.

Figure 8.1e Encryption entries for 64-bit



WEP setup

Key 11 22 33 44 55 66 77 88 99 AA BB CC DD

Note: Changes made will only take effect after rebooting.

Figure 8.1f Encryption entries for 128-bit

15. Click on the “Save” button and then reboot to take effect.

Chapter 9 Setting up of Wide Area Network using Gateway Mode

This chapter will elaborate on how the Compex WP11B+ can be set as a Broadband Internet Gateway. As the Compex WP11B+ supports different types of broadband connections, it is important that you choose the right connection type.

9.1 Selecting the Right connection for your Broadband Internet Service

The following summarizes the type of connection suitable for your broadband Internet subscription.

Static IP
This type of connection should only be used if and only if you have subscribed to a fixed IP address or a range of fixed IP addresses from your service provider for your Internet connection.

Dynamic IP
This type of connection should be used if you are configuring the Compex WP11B+ for your Internet service. Once powered on, the Compex WP11B+ will request for an IP address, which will be automatically assigned by your service provider. Certain Internet Service Providers require DHCP Client ID before an IP address is released. For such cases, you must configure the **System Identity** with a **System Name** and this is equivalent to the DHCP Client ID. The configuration of **System Identity** may be found in the section on **"System Identity"**.

PPP Over Ethernet (PPPoE)
This type of connection should be chosen for ADSL services in countries that use standard PPP over Ethernet (PPPoE) for authentication. This includes Germany which uses T-1 connection.

NOTE
If you are using SingTel Magix SuperSurf in Singapore, you should select **Singapore ADSL (Ethernet 512K)**. Subscribers of SingNet Broadband and Pacific Internet Broadband should select **PPPoE** as their WAN types.

Australia BPA Cable
This type of connection is specially customized for BPA Cable Internet subscribers in Australia.

NOTE
If you are using Big Pond Cable Internet in Australia, you should select Australia BPA Cable as the WAN type for your Compex WP11B+.

Chapter 9 Setting up of Wide Area Network using Gateway Mode

NOTE
If you are subscribers of OPTUS in Australia, please select **Dynamic IP** as your WAN type and configure the router's System Name with the DHCP Client ID, refer to section on **System Identity** of this User Manual.

9.2 Setup on Compex WP11B+ for Broadband Internet Access

For such service, you should have the IP address provided by your ISP ready before proceeding.

1. Connect a crossover cable from the Ethernet port of the Compex WP11B+ to your workstation.

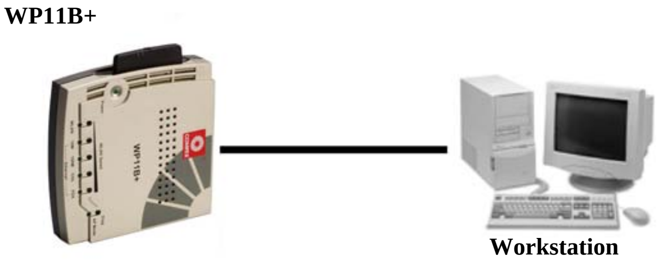


Figure 9.2a Connect Compex WP11B+ to PC

2. As there are many different brands of broadband modems, some broadband modems may provide a straight-connect (MDI) Ethernet cable while some may use a cross-connect (MDIX) Ethernet cable.

   For example:
   Aztech Turbo 900 provides cross-connect (MDIX) cable while Alcatel 1000 ADSL modem provides straight-connect (MDI) cable.

3. Power on both your workstation and the Compex WP11B+. The WLAN LED should light up, indicating the connection has been established.

4. You may start to configure the Compex WP11B+ before connecting to the Internet. Please refer to **"Basic Configuration for Compex WP11B+"** section.

5. After configuration, switch off both your workstation and Compex WP11B+.

6. Next, remove cable from your workstation and insert it into your modem's Ethernet port.

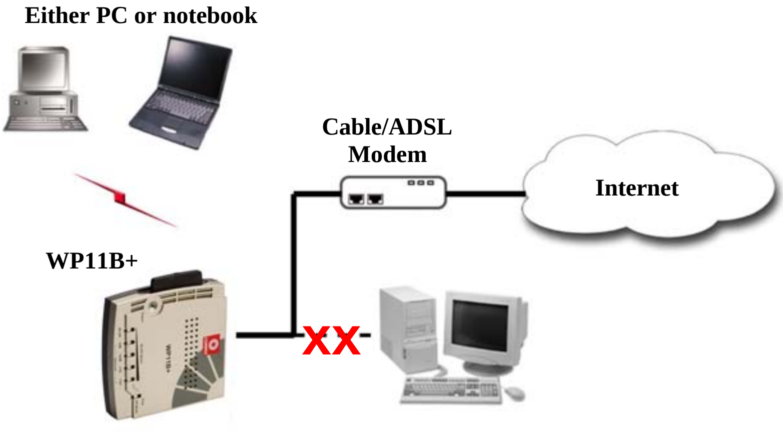


Figure 9.2b Connect Compex WP11B+ to modem

7. Power on your broadband modem and wait for it to complete the initialization process which may take a minute or more.

8. Next, power ON the Compex WP11B+. When either of the 10M or 100M Ethernet LED lights up, this shows that there is a cable connection between the ADSL modem and the Compex WP11B+.

9. Power ON the PC/notebook and the WLAN port LED should light up after entering the Windows environment. This indicates good cable connection between the PC and the Compex WP11B+.

10. Once everything is checked, you can now access to the Internet.

9.3 Configure Compex WP11B+ using Web Interface

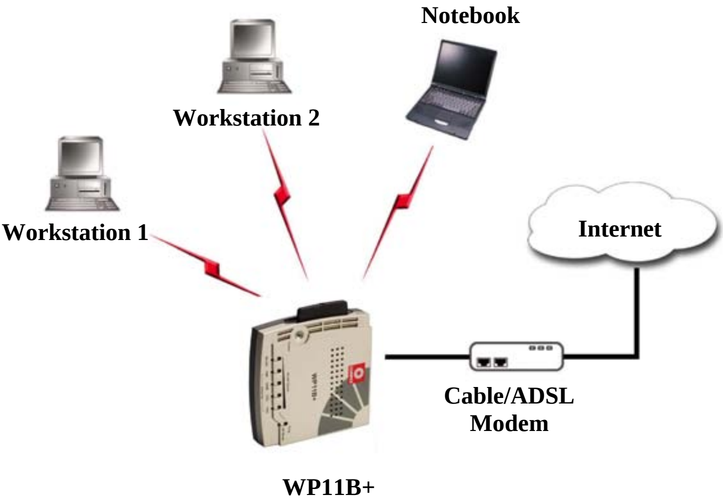
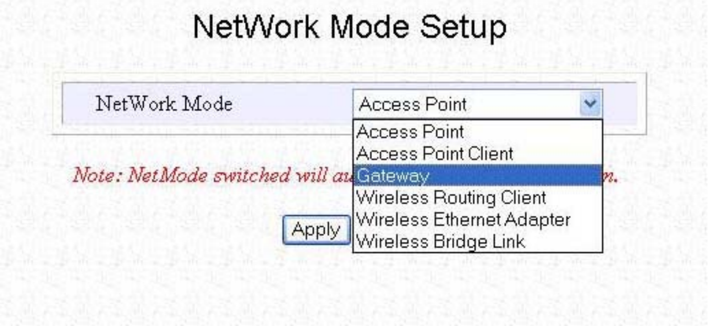


Figure 9.3a Physical layout for Wireless Broadband Internet Gateway

Assuming that Compex WP11B+ is in the default setting.

1. Activate the **uConfig** program, click on the “OpenWeb” button.
2. Go to the **CONFIGURATION** menu and click on **Mode Selection**. Select **Gateway** mode and click on the “Apply” button. Next, click on the “Yes” button to reboot the device.

3. Go to **uConfig** program and click on the “OpenWeb” button. Logon again and now Compex WP11B+ is in **Gateway** Mode.



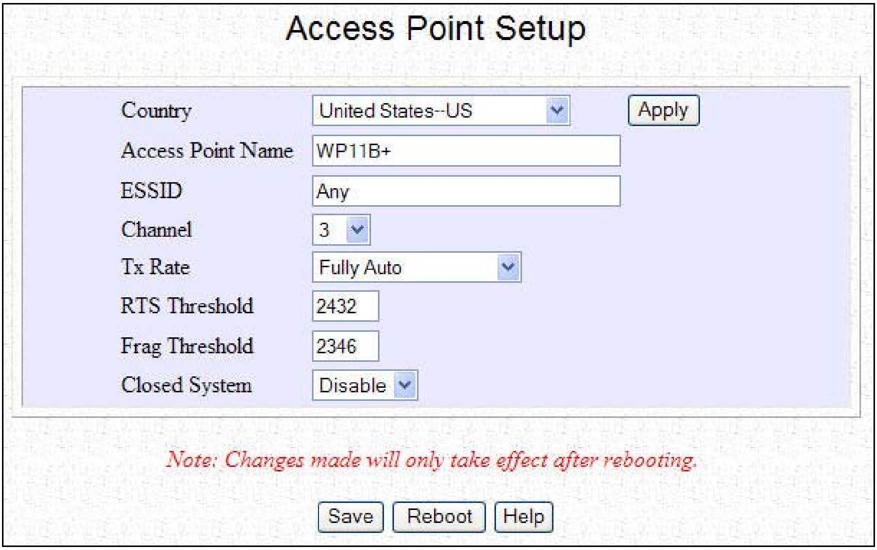
NetWork Mode Setup

NetWork Mode: Access Point

Note: NetMode switched will au… n.

Figure 9.3b Selection of Network Mode – Gateway

4. Next, click on the “Apply” button to proceed to the Access Point Setup.



Access Point Setup

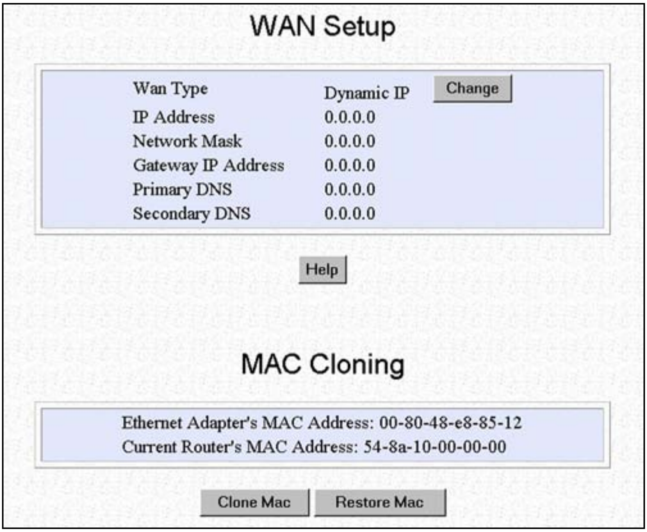
Country	United States--US
Access Point Name	WP11B+
ESSID	Any
Channel	3
Tx Rate	Fully Auto
RTS Threshold	2432
Frag Threshold	2346
Closed System	Disable

Note: Changes made will only take effect after rebooting.

Figure 9.3c Access Point Setup in Gateway Mode

5. For details in configuring Pseudo VLAN and WEP encryption method, please refer to the **Section 7.1 “Adding a client from the Pseudo Group**”, Step 4.

6. If you want to configure WAN setup, proceed to **WAN Setup** and the following GUI will appear. By default, Compex WP11B+ is pre-configured with Dynamic IP, which is suitable for most Cable Internet service providers.



WAN Setup

Wan Type	Dynamic IP
IP Address	0.0.0.0
Network Mask	0.0.0.0
Gateway IP Address	0.0.0.0
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0

MAC Cloning

Ethernet Adapter's MAC Address: 00-80-48-e8-85-12
Current Router's MAC Address: 54-8a-10-00-00-00

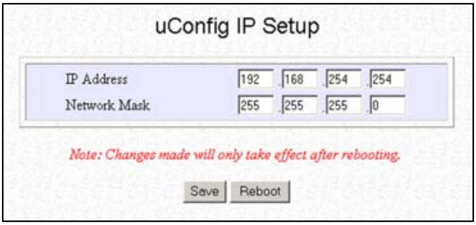
Figure 9.3d WAN setup

Alternatively, you may also choose the different WAN type by clicking on the “Change” button. For more details, please refer to the next chapter.

9.3.1 Advanced configuration in Gateway Mode

uConfig IP Setup

By selecting **uConfig IP Setup** function from the Command window, you can change the IP address which the **uConfig** program will trace.



uConfig IP Setup

IP Address 192 . 168 . 254 . 254

Network Mask 255 . 255 . 255 . 0

Note: Changes made will only take effect after rebooting.

Figure 9.3e uConfig IP Setup

More advanced features can also be configured to Compex WP11B+ for you to manage the LAN usage of Internet access better, such as installing the filter rule. Details on how to create rules for filtering can be found in **“Packet Filtering”**.

Chapter 10 Setting up of WAN using Wireless Routing Client

Setting Compex WP11B+ as a wireless routing client enables you to access to the internet through wireless method. The PCMCIA LAN card will act as a WAN port. It will communicate with an Access Point and then from there, we can access to Internet through the ADSL/Cable modem which is connected to the Access Point. In this way, the Ethernet port of Compex WP11B+ can be used to connect to other networking devices, such as switches to cater for more PCs.

10.1 Setting up Compex WP11B+ as Wireless Routing Client

1. Connect a crossover cable from the Ethernet port of the Compex WP11B+ to your workstation.

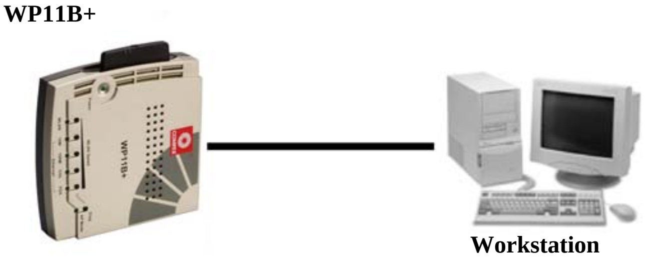


Figure 10.1a Connect Compex WP11B+ to PC

2. Power on both your workstation and the Compex WP11B+. The WLAN LED should light up, indicating the connection has been established.

3. You may start to configure the Compex WP11B+ before connecting to the Internet. Please refer to **“Configuring Compex WP11B+ as Wireless Routing Client through Web Interface”**.

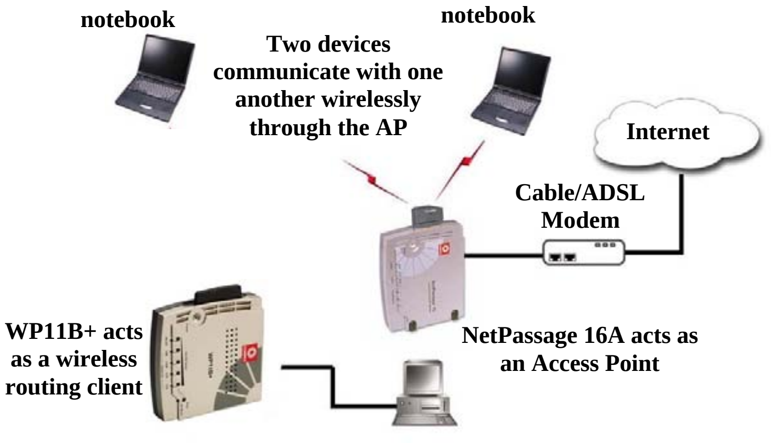

notebook
notebook
Two devices communicate with one another wirelessly through the AP
Internet
Cable/ADSL Modem
WP11B+ acts as a wireless routing client
NetPassage 16A acts as an Access Point

Figure 10.1b Physical layout for setting Compex WP11B+ as Wireless Routing Client

4. Power on the broadband modem and wait for it to complete the initialization process which may take a minute or more, depending on the brand and design of individual modem.

5. Next, power ON the Compex WP11B+ and Compex NetPassage 16A. When either of the 10M or 100M Ethernet LED lights up, this shows that there is a good cable connection between the ADSL modem, Compex WP11B+ and Compex NetPassage 16A.

6. Power ON the PC/notebook and the WLAN port LED should light up after entering the Windows environment. This indicates good cable connection between the switch/notebook and the Compex WP11B+.

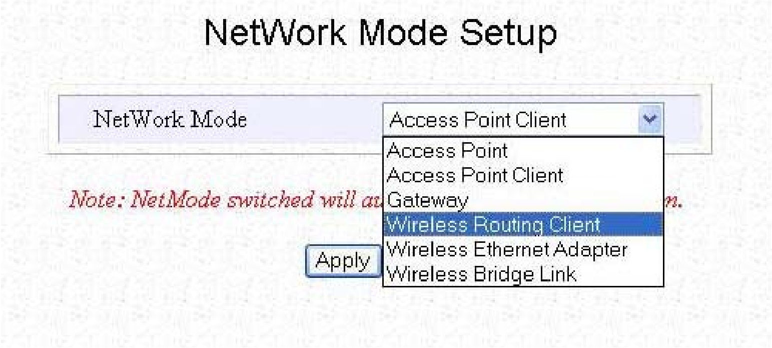
7. Assume that Compex NetPassage 16A has been configured as an Access Point, you can now access to the Internet.

10.2 Configuring Compex WP11B+ as Wireless Routing Client through Web Interface

Assuming that Compex WP11B+ is in the default setting.

1. Activate the **uConfig** program, click on the “OpenWeb” button.

2. Go to the **CONFIGURATION** menu and click on **Network Mode Selection**. Select **Wireless Routing Client** mode and click on the “Apply” button. Next, click on the “Yes” button to reboot the device.



NetWork Mode Setup

NetWork Mode: Access Point Client

Note: NetMode switched will au n.

Figure 10.2a Selection of Network Mode – Wireless Routing Client

---

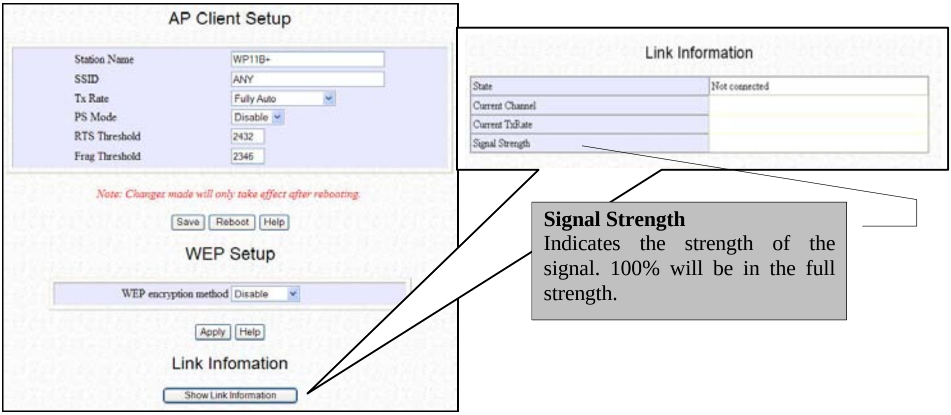
NOTE

Do not hit the “Logon” button. This will not lead you to the authentication page!!

---

3. Go to **uConfig** program and click on the “OpenWeb” button. Logon again and now Compex WP11B+ is in **Wireless Routing Client** Mode.

4. Next, click on the “Apply” button to proceed to the **AP Client Setup**.



AP Client Setup

Station Name: WP11B+
SSID: ANY
Tx Rate: Fully Auto
PS Mode: Disable
RTS Threshold: 2432
Frag Threshold: 2346

Note: Changes made will only take effect after rebooting.

WEP Setup

WEP encryption method: Disable

Link Infomation

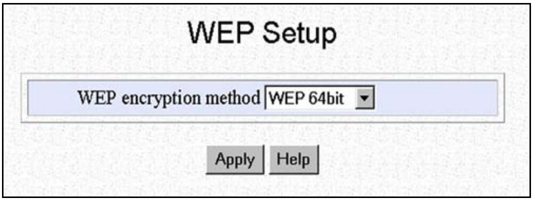
Link Information

State	Not connected
Current Channel	
Current TxRate	
Signal Strength	

Signal Strength
Indicates the strength of the signal. 100% will be in the full strength.

Figure 10.2b Wireless Routing Client Setup

5. Next, you have the option to choose either 64-bit or 128-bit for WEP Encryption from the **WEP Setup** as shown below. Select your option and click on the “Apply” button.

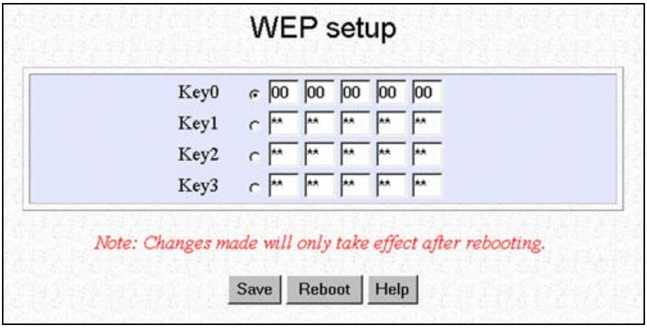


WEP Setup

WEP encryption method: WEP 64bit

Figure 10.2c Selecting WEP encryption method

6. Enter your encryption key. The parameters take in hexadecimals.



WEP setup

Key0 ● 00 00 00 00 00

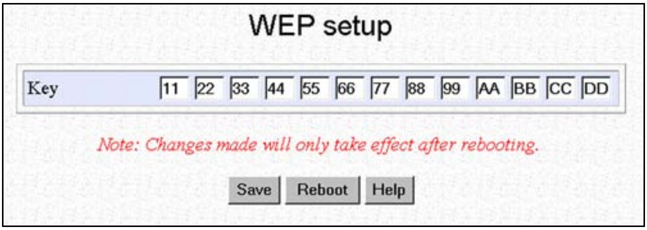
Key1 ○ ** ** ** ** **

Key2 ○ ** ** ** ** **

Key3 ○ ** ** ** ** **

Note: Changes made will only take effect after rebooting.

Figure 10.2d Encryption entries for 64-bit



WEP setup

Key 11 22 33 44 55 66 77 88 99 AA BB CC DD

Note: Changes made will only take effect after rebooting.

Figure 10.2e Encryption entries for 128-bit

7. Click on the “Save” button and then reboot to take effect.

8. If you want to configure WAN setup, proceed to **WAN Setup** and the following GUI will appear. By default, Compex WP11B+ is pre-configured with Dynamic IP, which is suitable for most Cable Internet service providers.

Chapter 11 Setting up of Wireless Ethernet Adapter Mode

Wireless Ethernet Adaptor is like our AP Client, but it only can connect one wired PC. This mode is for some ISPs which use it to bridge wired to wireless network.

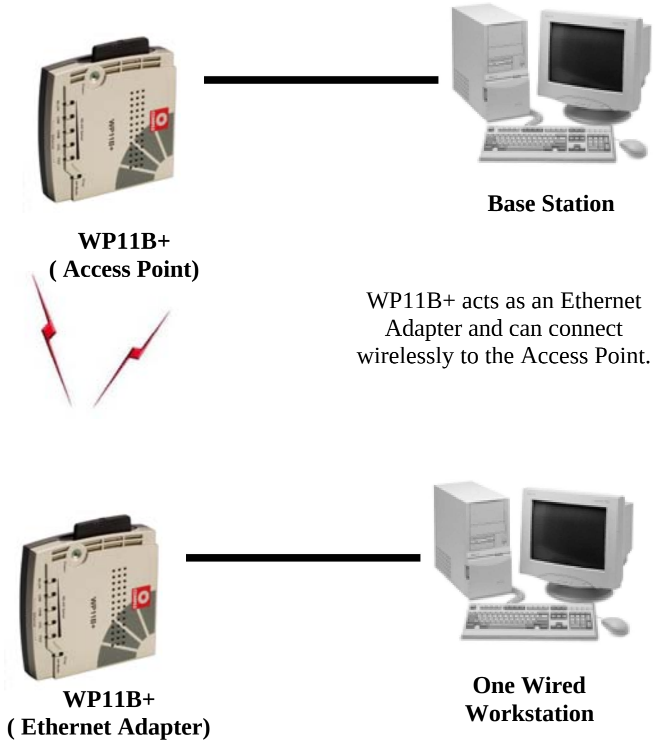

Base Station
WP11B+
(Access Point)
WP11B+ acts as an Ethernet Adapter and can connect wirelessly to the Access Point.
WP11B+
(Ethernet Adapter)
One Wired Workstation

Figure 11.1a Connecting the Wireless Ethernet Adapter

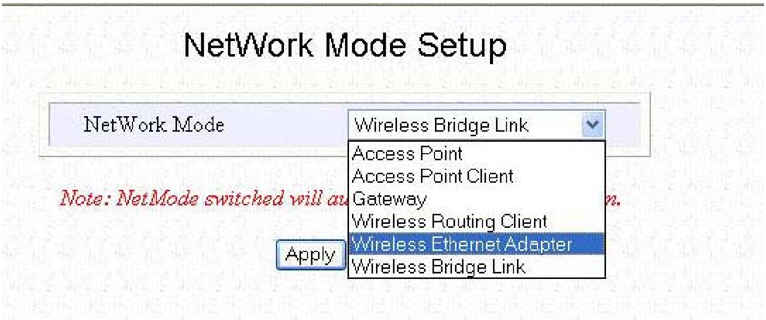
Chapter 11 Setting up of WAN using Wireless Ethernet Adapter

11.1 Configuring the Wireless Ethernet Adapter Mode

With Compex WP11B+ in its default setting,

1. Activate **uConfig** program, click on the “OpenWeb” button.

2. Go to the **CONFIGURATION** menu and click on **Mode Selection**. In the **Network Mode Setup**, select **Wireless Ethernet Adapter** as shown in Figure 11.1a.



NetWork Mode Setup

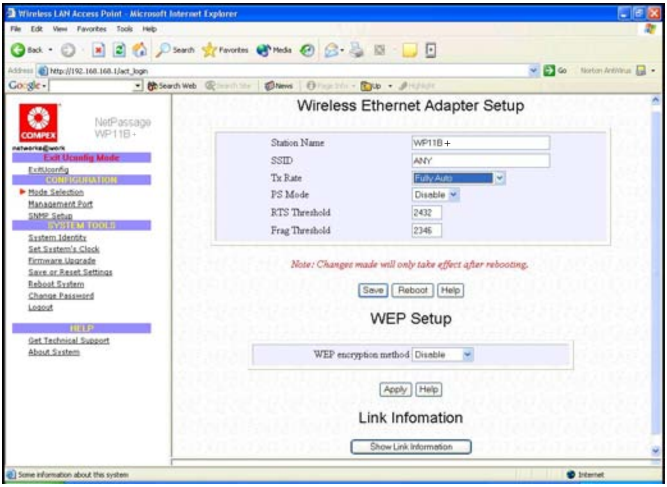
NetWork Mode Wireless Bridge Link

Figure 11.1a Selection of Network Mode

3. Click on the “Apply” button. The system will prompt you to reboot your system.

4. Go to **uConfig** program and wait for the system to refresh the screen. Click on the “OpenWeb” button to proceed. The system will lead you to the authentication page again. Logon again and Compex WP11B+ will be in Wireless Ethernet Adapter Mode.

11.2 Configuring the Wireless Ethernet Setup



Wireless Ethernet Adapter Setup

Station Name: WP11B+
SSID: ANY
Tx Rate: Fully Auto
PS Mode: Disable
RTS Threshold: 2432
Frag Threshold: 2346

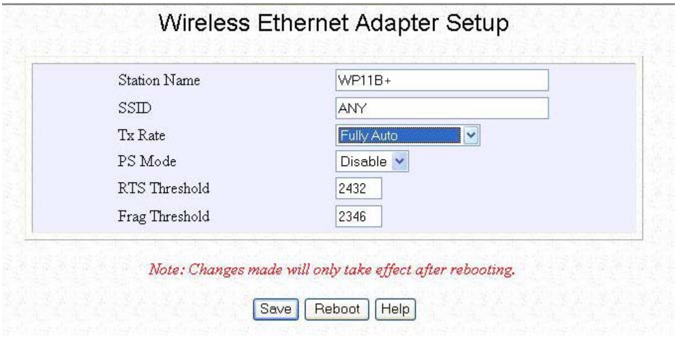
Note: Changes made will only take effect after rebooting.

WEP Setup

WEP encryption method: Disable

Link Infomation

Figure 11.2a Wireless Ethernet Adapter Setup



Wireless Ethernet Adapter Setup

Station Name: WP11B+
SSID: ANY
Tx Rate: Fully Auto
PS Mode: Disable
RTS Threshold: 2432
Frag Threshold: 2346

Note: Changes made will only take effect after rebooting.

Figure 11.2b Wireless Ethernet Adapter Setup

Station Name
This is used to identify the Access Point Client in the network. This is particular useful if there are many wireless devices in the network. The parameter allows a maximum of 31 alphanumeric characters.

SSID
Acronym for Service Set Identifier, a 32-character unique identifier which is attached to the header of packets sent over a WLAN. The SSID differentiates one WLAN from another, so all access points and all devices attempting to connect to a specific WLAN must use the same

SSID. A device will not be permitted to join the network group unless it can provide the same unique SSID. A SSID is also referred to as a **Network Name** because essentially it is a name that identifies a wireless network.

Tx Rate
This is the transmission rate at which the data is transmitted.
The options available are
# 1Mbps
# 2Mbps
# 1/2Mbps
# 5.5Mbps
# 11Mbps
# Fully Automatic.

PS Mode
Power Saving Mode. This would allow a more efficient usage of the power on the device.

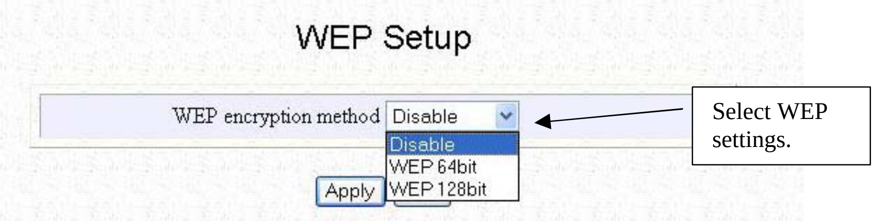
RTS/CTS Threshold
This determines the minimum bytes of a packet size before invoking the RTS/CTS mechanism. Packets that exceed the specified RTS threshold would trigger the RTS/CTS mechanism. An RTS threshold value of zero would have indicated that it would transmit all the packtes using RTS/CTS.

The values that can be set the RTS/CTS parameter ranges from 0 to 3000 bytes.

Fragmentation Threshold
This determines the size of that data packet that will be fragmented. The size can range from 256 to 2346 bytes.

Click on Save to save the settings. However, the system must be rebooted in order for the changes to take effect.

11.3 Configuring the WEP setup



WEP Setup

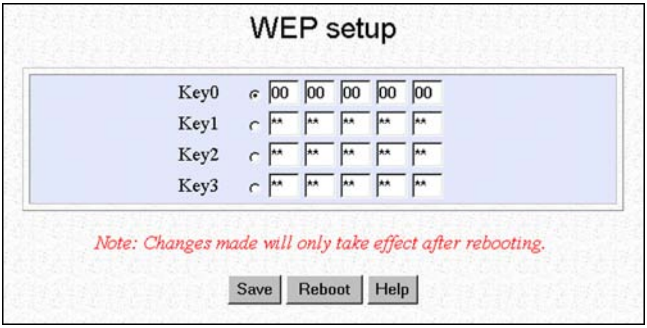
WEP encryption method: Disable

Select WEP settings.

Figure 11.3a WEP Setup

Next, you may wish to use a private encryption key to ensure data security. From Figure 11.3a, you have the option to choose either 64-bit or 128-bit for WEP Encryption from the **WEP Setup** as shown below. Select your option and click on the "Apply" button.

Enter your encryption key. The parameters should be in hexadecimals.

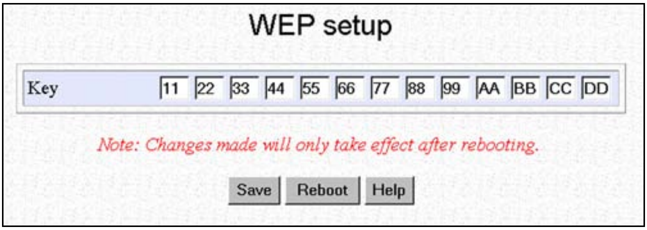


WEP setup

Key0 ● 00 00 00 00 00
Key1 ○ ** ** ** ** **
Key2 ○ ** ** ** ** **
Key3 ○ ** ** ** ** **

Note: Changes made will only take effect after rebooting.

Figure 11.3b Encryption entries for 64-bit



WEP setup

Key: 11 22 33 44 55 66 77 88 99 AA BB CC DD

Note: Changes made will only take effect after rebooting.

Figure 11.3c Encryption entries for 128-bit (for illustration purposes)

Click on Save and then reboot to take effect.

Chapter 12 Setting up WAN using Wireless Bridge Link Mode

Compex WP11B+ may also be configured in Wireless Bridge Link mode which allows point-to-point communication between different buildings (within 100meters). In Figure 12.1a, both Compex WP11B+ are configured to perform transparent Bridging between two buildings.

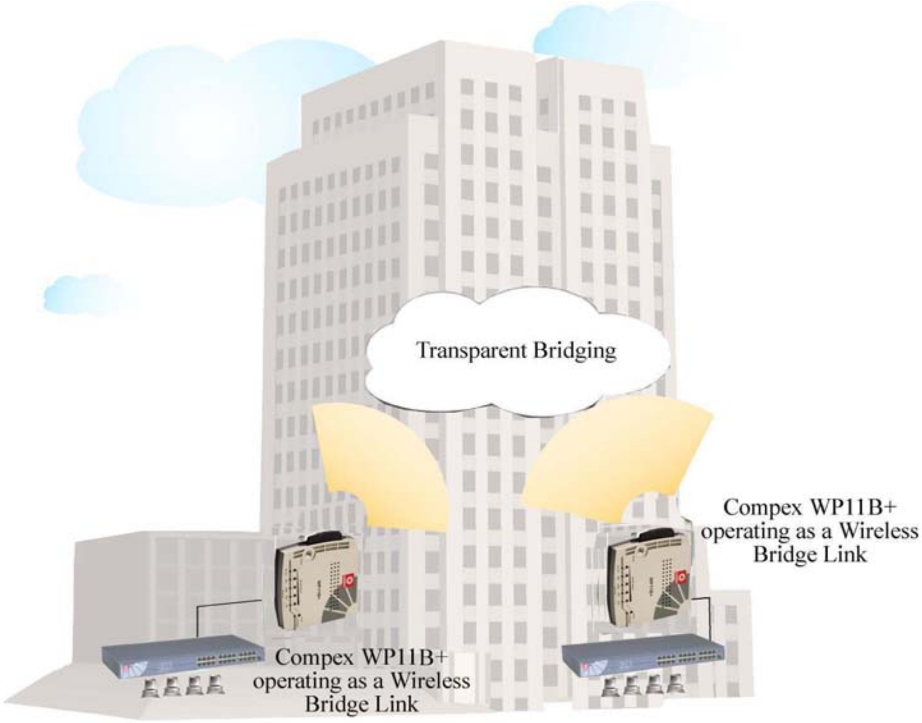

Transparent Bridging
Compex WP11B+ operating as a Wireless Bridge Link
Compex WP11B+ operating as a Wireless Bridge Link

Figure 12.1a Illustration on using Wireless Bridge Link Mode

Chapter 12 Setting up of WAN using Wireless Bridge Link Mode

12.1 Setting up Compex WP11B+ as Wireless Bridge Link

1. Connect a crossover cable from the Ethernet port of the Compex WP11B+ to your workstation.

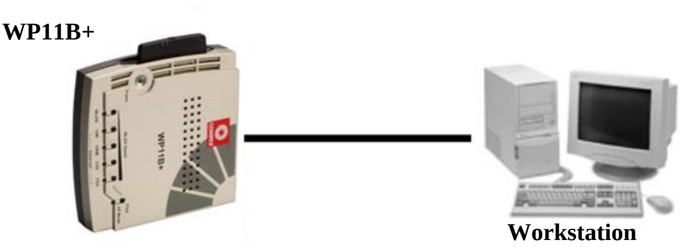


Figure 12.1a Connect Compex WP11B+ to PC

2. Power on both your workstation and the Compex WP11B+. The WLAN LED should light up, indicating the connection has been established.

3. Now, you may start configuring Compex WP11B+ as Wireless Bridge Link mode. Please refer to **Section 12.2 “Configuring Compex WP11B+ as Wireless Bridge Link through Web Interface”**.

After configuring the first Compex WP11B+, please follow the procedure as shown above for the other wireless access point.

12.2 Configuring Compex WP11B+ as Wireless Bridge Link Mode through Web Interface

Assuming that Compex WP11B+ is in the default setting.

1. Activate the **uConfig** program, click on the “OpenWeb” button.
2. Go to the **CONFIGURATION** menu and click on **Network Mode Selection**. Select **Wireless Bridge Link** mode and click on the “Apply” button. Next, click on the “Yes” button to reboot the device.

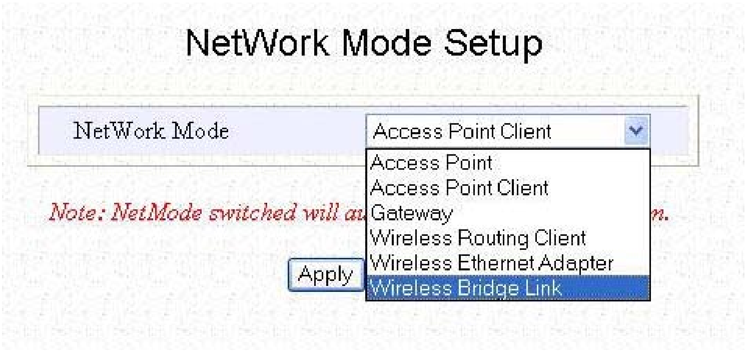


Figure 12.2a Selection of Network Mode – Wireless Bridge Link

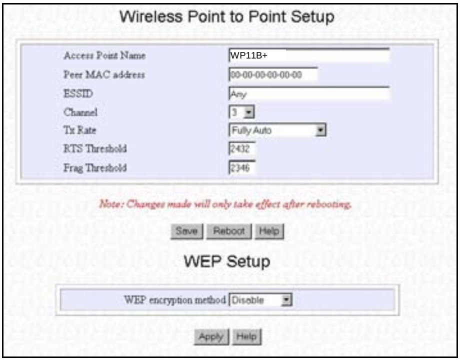
---

NOTE
Do not hit the “Logon” button. This will not lead you to the authentication page!!

---

3. Go to **uConfig** program and click on the “OpenWeb” button. Logon again and now Compex WP11B+ is in **Wireless Bridge Link** Mode.

4. Next, click on the “Apply” button to proceed to the **Wireless Point to Point** Setup.



Wireless Point to Point Setup

Access Point Name: WP11B+
Peer MAC address: 00-00-00-00-00-00
ESSID: Any
Channel: 3
Tx Rate: Fully Auto
RTS Threshold: 2432
Frag Threshold: 2346

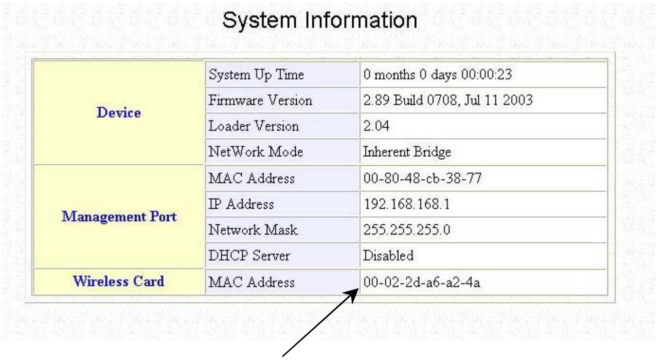
Note: Changes made will only take effect after rebooting.

WEP Setup

WEP encryption method: Disable

Figure 12.2b Wireless Point to Point Setup

5. From here, you need to know the MAC address of the other Compex WP11B+. Simply logon to the web interface of another Compex WP11B+ and hit on the **About System** option in the Command Menu Window. A Graphic User Interface will appear as shown in Figure 12.2c.



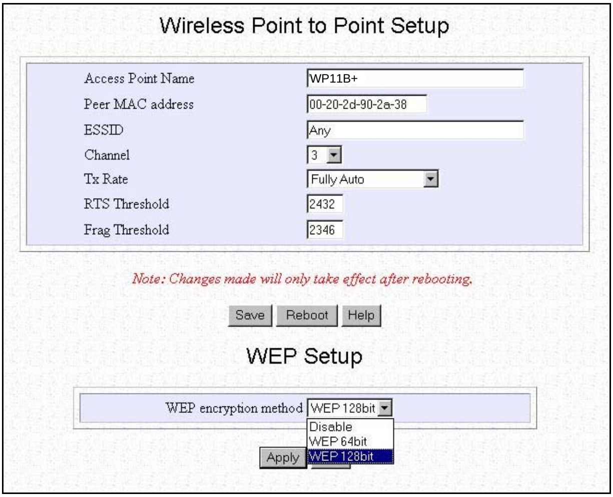
System Information

Device	System Up Time	0 months 0 days 00:00:23
	Firmware Version	2.89 Build 0708, Jul 11 2003
	Loader Version	2.04
	NetWork Mode	Inherent Bridge
Management Port	MAC Address	00-80-48-cb-38-77
	IP Address	192.168.168.1
	Network Mask	255.255.255.0
	DHCP Server	Disabled
Wireless Card	MAC Address	00-02-2d-a6-a2-4a

Take note of this
MAC address

Figure 12.2c MAC address stated in System Information section

6. Now, you can enter the peer MAC address in the field provided. Click on the "Apply" button.



Wireless Point to Point Setup

Access Point Name	WP11B+
Peer MAC address	00-20-2d-90-2a-38
ESSID	Any
Channel	3
Tx Rate	Fully Auto
RTS Threshold	2432
Frag Threshold	2346

Note: Changes made will only take effect after rebooting.

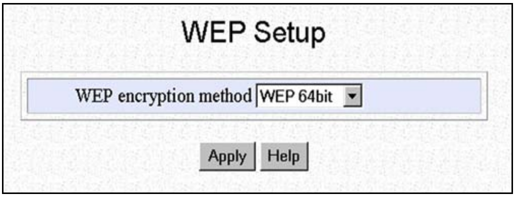
WEP Setup

WEP encryption method	WEP 128bit

Figure 12.2d Entering MAC address in respective field

The message window will indicates that the MAC address has changed to 00-02-2d-a6-a2-4a, and will prompt you to reboot your system. Click "Yes" button to reboot.

7. Next, you may wish to use a private encryption key to ensure data security. Simply go to select **Wireless Bridge Link** mode and click on the "Apply" button. From Figure 12.2e, you have the option to choose either 64-bit or 128-bit for WEP Encryption from the **WEP Setup** as shown below. Select your option and click on the "Apply" button.

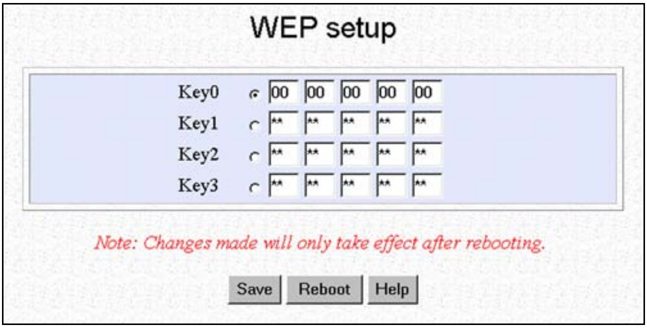


WEP Setup

WEP encryption method	WEP 64bit

Figure 12.2e Selecting WEP encryption method

8. Enter your encryption key. The parameters take in hexadecimals.

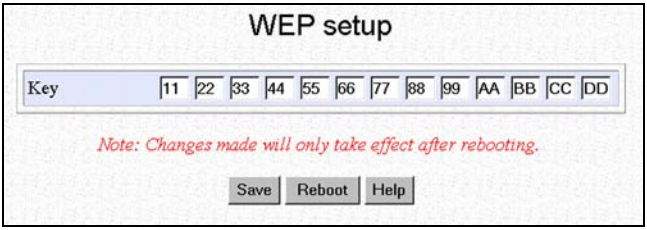


WEP setup

Key0 ● 00 00 00 00 00
Key1 ○ ** ** ** ** **
Key2 ○ ** ** ** ** **
Key3 ○ ** ** ** ** **

Note: Changes made will only take effect after rebooting.

Figure 12.2f Encryption entries for 64-bit



WEP setup

Key 11 22 33 44 55 66 77 88 99 AA BB CC DD

Note: Changes made will only take effect after rebooting.

Figure 12.2g Encryption entries for 128-bit

9. Click on the “Save” button and then reboot to take effect.

Chapter 13 Configuration on Various WAN Type

This section explains how to configure the Compex WP11B+ as a Wireless Broadband Internet Gateway to distribute Broadband Internet Access to a wireless network.

Besides Dynamic IP connection, Compex WP11B+ also supports Static IP, PPP over Ethernet, Singapore ADSL (Ethernet 512K) and Australia BPA Cable.

If you have chosen self-installation when you register for your broadband service, you should first test the ADSL modem together with the logon account on your PC or notebook. Ensure that it can connect successfully before attempting to run it with Compex WP11B+.

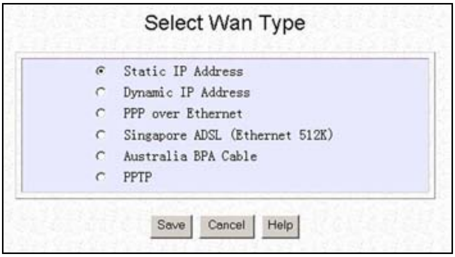
For simplicity and illustration purposes, it is assumed that the following LAN environment uses the IP address 192.168.168.xxx and Compex WP11B+ is using the default settings.

However, if you have assigned a different IP address for Compex WP11B+, then use the new settings in the setup procedures.

13.1 Configuring Static IP Connection

1. Go to WAN setting at Command Window, click on the “Change” button and check the radio button next to the Static IP Address.

2. Click on “Save” button to update the data.

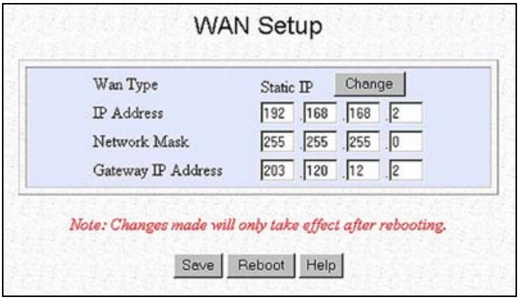


Select Wan Type

● Static IP Address
○ Dynamic IP Address
○ PPP over Ethernet
○ Singapore ADSL (Ethernet 512K)
○ Australia BPA Cable
○ PPTP

Figure 13.1a Select WAN Type - Static IP Address

3. The **WAN Setup** screen shows a **Static IP Configuration** that allows you to configure your Static IP connection to your ISP.



WAN Setup

Wan Type	Static IP
IP Address	192 . 168 . 168 . 2
Network Mask	255 . 255 . 255 . 0
Gateway IP Address	203 . 120 . 12 . 2

Note: Changes made will only take effect after rebooting.

Figure 13.1b WAN Static IP Address Configuration

4. Fill in the required field for the IP address, Network Mask and Gateway.

5. All these information can be obtained from your ISP/Network Administrator.

6. After you have entered every field, click on the “Save” button to save the configuration and reboot the Compex WP11B+.

Now you can surf the Internet freely.

13.2 Configuring Dynamic IP Connection

The Compex WP11B+ is pre-configured with WAN connection using Dynamic IP. Hence, if you are using Cable Internet access, you do not need to configure the WAN connection.

However, if your account requires a **DHCP Client ID** in order to release an IP address, you may need to configure the name of Compex WP11B+ with that of the DHCP Client ID issued by your ISP.

See the section on “**System Identity”**, and remember to enter the DHCP Client ID issued by the ISP into the **System Name** field in the System Identity.

NOTE
If your computer is not able to resolve any web site, please verify that your DNS entry of the computer has been defined correctly.

13.2.1 How to configure Singapore Cable Vision (SCV) Service

SCV provides a Dynamic IP address connection service. Assuming that your WP11B+ is not in the Dynamic IP setting, please follow the procedures to change to the appropriate WAN type.

1. Go to **WAN Setup**. Click on the “Change” button for list of other WAN types Selection.

2. On the list of other WAN types selection, check the radio button next to the **Dynamic IP Address** and click on the “Save” button.

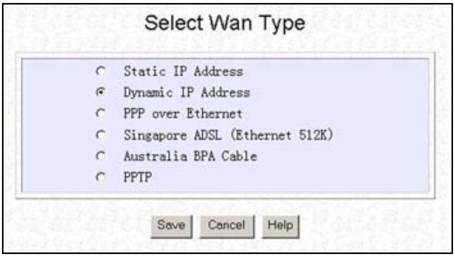


Figure 13.2a Dynamic IP Address – for SCV broadband provider

Now, you can start surfing the Internet. You might want to manage the Internet access by setting Filtering rules etc. For details, please refer to section on **“Packet Filtering”**.

13.2.2 How to Configure @HOME Cable Service

Many broadband services require a simple DHCP request for connection. Two such cable services are Optus@Home and Roger@Home.

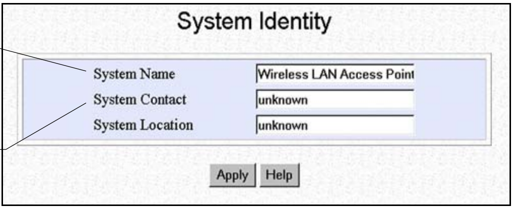
To configure the @HOME Cable Service,

1. Follow the steps stated in the previous “**Configuring for Singapore Cable Vision (SCV) Service**” section.

2. Next, click on **System Identity** at the Command window under the **SYSTEM TOOLS** menu and enter the required field as shown.

System Name
You can obtain this information from your ISP.

System Contact and Location
You may leave it as it is or fill in your ISP contact and location information. They are for your future reference only.



System Identity

System Name: Wireless LAN Access Poin
System Contact: unknown
System Location: unknown

Figure 13.2b System Identity

3. Click on the “Apply” button to set the System Identity.

4. Reboot your device.

5. Now, you can start surfing the Internet. If you want to have advanced configuration on your device, please refer to the **“Packet Filtering”** section or the **“Configuring Network Address Translation”** section.

13.3 Configuring PPP over Ethernet Session (PPPoE)

For Broadband service providers such as Pacific Internet Broadband and SingNet Broadband, you have to select the PPPoE WAN configuration. This includes users in Germany who use T-1 connection.

NOTE
Certain ADSL Internet subscriptions require **Service Name** to be specified in order to establish a PPPoE connection.

13.3.1 How to Configure SingNet, PacNet and QALA DSL Broadband

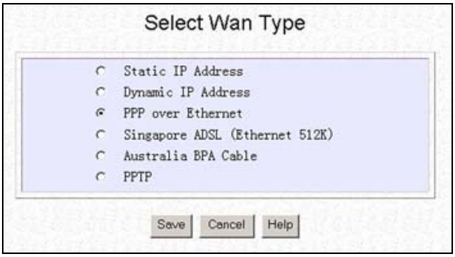
This procedure assumes you have a login account from SingNet, Pacific Internet or QALA DSL broadband service, and also all the necessary hardware installation is in place.

NOTE
If you have opted for self-installation when you register for the broadband service, you should first test out the ADSL modem by logging in from your PC. Make sure it can connect successfully before attempting to run it with the Compex WP11B+

1. Click on the **WAN Type** option on the Command window. The default Dynamic IP setup page will display.

2. Click on the “Change” button and check the radio button next to the **PPP over Ethernet**.

3. Click on the “Save” button.



Select Wan Type

○ Static IP Address
○ Dynamic IP Address
● PPP over Ethernet
○ Singapore ADSL (Ethernet 512K)
○ Australia BPA Cable
○ PPTP

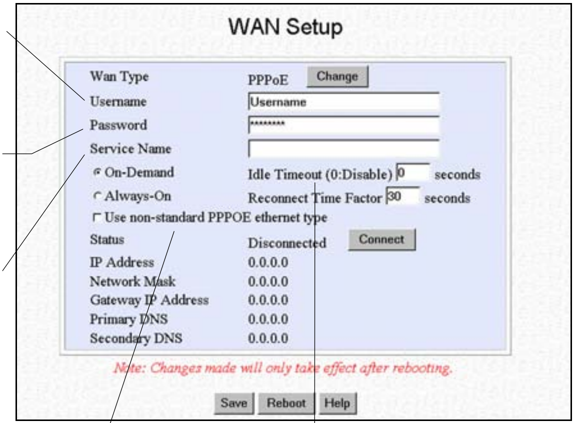
Figure 13.3a PPP Over Ethernet –WAN Type

The **WAN Setup** screen below displays the **PPPoE** configuration that allows you to configure your ADSL access.

Username
Enter your ADSL login username in this field.

Password
Enter your ADSL login password in this field.

Service Name
Certain ADSL Internet subscriptions require the user to key in the service name. You may do so in this field.



WAN Setup

Wan Type PPPoE
Username: Username
Password: ********
Service Name:
● On-Demand Idle Timeout (0:Disable) 0 seconds
○ Always-On Reconnect Time Factor 30 seconds
☐ Use non-standard PPPOE ethernet type
Status Disconnected
IP Address 0.0.0.0
Network Mask 0.0.0.0
Gateway IP Address 0.0.0.0
Primary DNS 0.0.0.0
Secondary DNS 0.0.0.0

Note: Changes made will only take effect after rebooting.

Non-Standard PPPoE Ethernet Type
If you are using a Non-Standard PPPoE ADSL connection like that of Pacific Internet Broadband using a 3COM ADSL modem, you will need to check the box next to **Use non-standard PPPoE Ethernet type**. If you are unsure about the PPPoE type, leave the box unchecked.

Idle Timeout
Idle Timeout is the duration of non-activity at the WAN port for disconnection.

Figure 13.3b WAN PPPoE Configuration

NOTE
Singapore users should follow the format below to enter their usernames:
Pacific Internet Broadband: username@pacific.net.sg
SingNet Broadband: username@singnet.com.sg
QALA DSL: username@qala.com.sg

4. After you have entered the required field, click on the “Save” button to update the configuration. Reboot the Compex WP11B+.

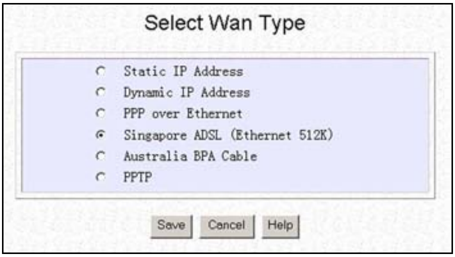
Now, you may activate the Internet Explorer and start surfing the Internet. Once the Compex WP11B+ is up and running, you might want to add advanced configurations such as Filtering to better manage your LAN. For details, refer to the **“Packet Filtering”** section.

13.4 Configuring for SingTel Magix SuperSurf

With your ADSL modem and PC, you can configure your WAN using the login account from SingTel Magix broadband service.

1. Select **WAN Type** and click on the “Change” button.

2. Check the radio button next to the **Singapore ADSL** and click on the “Save” button.

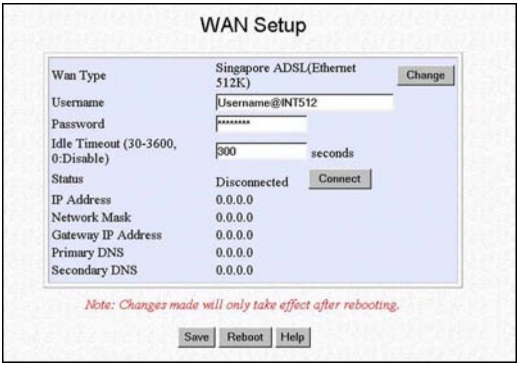


Select Wan Type

○ Static IP Address
○ Dynamic IP Address
○ PPP over Ethernet
● Singapore ADSL (Ethernet 512K)
○ Australia BPA Cable
○ PPTP

Figure 13.4a WAN Type - Singapore ADSL

3. The **WAN Setup** screen displays the configuration for Singapore ADSL which allows users in Singapore to configure their connection for Magix SuperSurf (512K) ADSL Broadband Internet.



WAN Setup

Wan Type	Singapore ADSL(Ethernet 512K)	Change
Username	Usemame@INT512	
Password	********	
Idle Timeout (30-3600, 0:Disable)	300	seconds
Status	Disconnected	Connect
IP Address	0.0.0.0	
Network Mask	0.0.0.0	
Gateway IP Address	0.0.0.0	
Primary DNS	0.0.0.0	
Secondary DNS	0.0.0.0	

Note: Changes made will only take effect after rebooting.

Figure 13.4b Singapore ADSL for SingTel Magix

4. Enter **Username, Password**, **Service Name** (optional) and **Idle Timeout** (disabled at default).

5. Click first the “Save” and then on the “Reboot” button to complete the WAN configuration.

   If all connections are properly established an Internet request, the Compex WP11B+ will detect and automatically establish the connection with Magix SuperSurf.

   Next, activate the Netscape/Microsoft Internet Explorer browser to start surfing the Net.

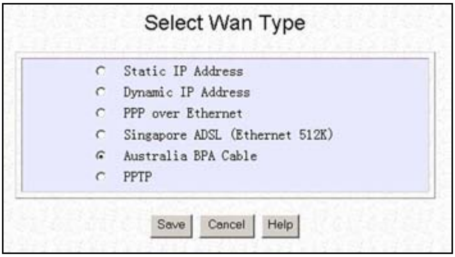
   In addition, you can implement advanced features such as Filtering (**“Packet Filtering”**) to control over your LAN users’ Internet access.

13.5 Configuring for BigPond Australia (BPA)

This type of connection is specially customized for BPA Cable Internet subscribers in Australia.

NOTE
For OPTUS subscribers in Australia, you have to select **Dynamic IP** as your **WAN type** and configure the Compex WP11B+’s **System Name** with the DHCP Client ID. Please refer to “**Configuring Dynamic IP Connection**”.

1. Click on **WAN Setup** and click on the “Change” to select WAN type as **Australia BPA Cable**.

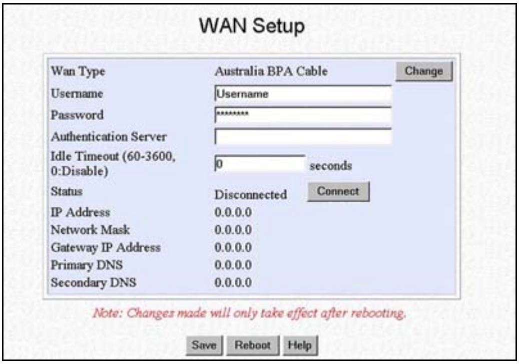


Select Wan Type

○ Static IP Address
○ Dynamic IP Address
○ PPP over Ethernet
○ Singapore ADSL (Ethernet 512K)
● Australia BPA Cable
○ PPTP

Figure 13.5a Australia BPA Cable –WAN Type

2. Click on "Save" and the **Australia BPA Cable WAN Setup** screen will appear for you to set the configuration.



WAN Setup

Wan Type	Australia BPA Cable
Username	Username
Password	********
Authentication Server	
Idle Timeout (60-3600, 0:Disable)	0 seconds
Status	Disconnected
IP Address	0.0.0.0
Network Mask	0.0.0.0
Gateway IP Address	0.0.0.0
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0

Note: Changes made will only take effect after rebooting.

Figure 13.5b Australia BigPond Cable

Australia BPA Cable configuration allows Australian users to configure the connection for BigPond Cable Internet. If you have subscribed to Optus@Home in Australia, please configure your connection profile using Dynamic IP.

3. Fill in the required fields for **Username**, **Password** and **Idle Timeout**.

4. After you have entered every field, click on the "Save" button to save the configuration.

5. Reboot Compex WP11B+.

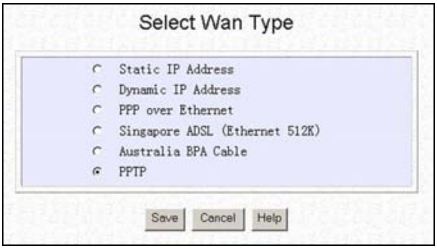
Now, you can start surfing the Internet. To configure the Compex WP11B+ with advanced functions such as NAT, filtering please refer to the **"Configuring Network Address Translation"** section and **"Packet Filtering"** section.

13.6 Point to Point Tunneling Protocol (PPTP)

PPTP enables implementation of secure, multi-protocol Virtual Private Networks (VPNs) through public data networks, such as Internet.

1. Click on **WAN Setup** and click on the "Change" to select WAN type as **PPTP**.

2. Press the **Change** button and the list of supported WAN type will be displayed as shown below.

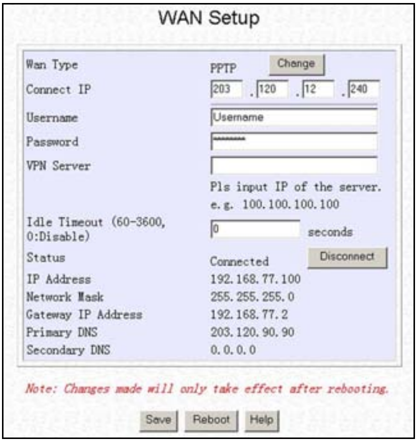


Select Wan Type

○ Static IP Address
○ Dynamic IP Address
○ PPP over Ethernet
○ Singapore ADSL (Ethernet 512K)
○ Australia BPA Cable
● PPTP

Figure 13.6a WAN Type – PPTP

3. Check the **PPTP** radio button and press the **Save** button. The configuration page for **PPTP** will be displayed.



WAN Setup

Wan Type	PPTP
Connect IP	203 . 120 . 12 . 240
Username	Username
Password	********
VPN Server	Pls input IP of the server. e.g. 100.100.100.100
Idle Timeout (60-3600, 0:Disable)	0 seconds
Status	Connected
IP Address	192.168.77.100
Network Mask	255.255.255.0
Gateway IP Address	192.168.77.2
Primary DNS	203.120.90.90
Secondary DNS	0.0.0.0

Note: Changes made will only take effect after rebooting.

Figure 13.6b Configuration on PPTP

4. Fill in the parameters for your PPTP service:

Connect IP	Key in the IP Address of your Service Provider.
Username	Enter the username of your PPTP subscription.
Password	Enter the password of the username.
VPN Server	Enter the IP Address for VPN server.
Idle Timeout	This field allows you to specify the idling timeout value for Compex WP11B+ to disconnect from the ISP. "0" value in this field disables idling timeout function. When set to "0", Compex WP11B+ remains connected unless disconnected by the ISP. Once disconnected, Compex WP11B+ will stay offline until the next Internet request is detected in the network.

5. Press the **Save** button followed by the **Reboot** button to complete the configuration process.

6. Enter all necessary information in the individual fields and press the **Save** button.

Press the **Reboot** button to complete the configuration process.

Chapter 14 Configuring Network Address Translation

In this chapter, we will illustrate on how you can host some Internet Servers on your LAN via the use of Compex WP11B+ configuration interface.

Before you attempt any NAT or Filtering configurations, you should ensure the Compex WP11B+ is ready for basic Internet access on LAN.

14.1 NAT and Virtual Server

Compex WP11B+ comes with a simple Network Address Translation (NAT) Firewall protection for your LAN. It uses a mechanism that substitutes a Private IP address with a Public IP address when a packet leaves the Private network; and restore the destination Public IP address with the Private IP address when the packet enters the Private network. With NAT firewall, you can protect your LAN from unauthorized access from the WAN.

One feature of the NAT is that any unauthorized requests from the Internet will not be allowed to pass through Compex WP11B+. Hence, with NAT, you can host a Virtual Server on the LAN. NAT works by translating packets of Private IP addresses to appear as originating from a single Public IP address; thus allowing multiple PCs in the LAN to appear as one PC to the WAN interface.

The implementation of a Virtual Server allows Internet servers such as Web Server, FTP Server and Mail Server to be hosted on your network. It is able to support both Port Forwarding and IP-Forwarding Servers.

NOTE
Note that static IP supports IP Forwarding only.

14.2 Defining Port-Forwarding Virtual Server

Port Forwarding redirects any incoming Public IP Internet request to another computer on a Private IP based on its TCP/UDP Port number.

Hence, when a WAN user sends a request to your network, the Compex WP11B+ (based on the Port–Forwarding configurations) will forward these requests to the assigned PC.

14.2.1 When to use Port–Forwarding Virtual Server

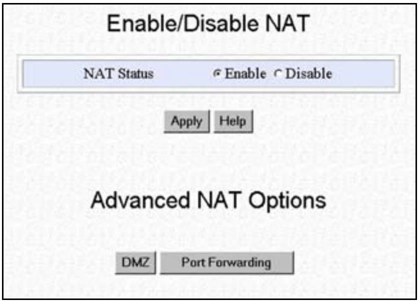
When your ISP assign you with only one fixed Public IP address, and you want to define the various servers (such as, FTP, HTTP, Netmeeting, Mail server etc) to specific Private IP address in your LAN; you can choose to host the servers by using the port-Forwarding Virtual server.

For example, suppose that you have a FTP Server with an IP address of 192.168.168.41 and your broadband ISP has assigned a Public IP address of 203.120.12.100 to the gateway. To support a Web Server in your Private Network, you need to define an **NAT Static Port-based Entry** to forward **TCP port 21** (used by FTP) to 192.168.168.41. Every http://203.120.12.100 requests will then be forwarded to the FTP Server.

14.3 Configuring Port–Forwarding virtual server with Compex WP11B+

Follow the steps shown below to configure the Port Forwarding function.

1. Go to **NAT** function at the Command Window. Select **Enable** for the status.



Enable/Disable NAT

NAT Status ● Enable ○ Disable

Figure 14.3a Configuring Network Address Translation

2. Click on the “Port Forwarding” button to display the **NAT Static Port Based Entries GUI**.

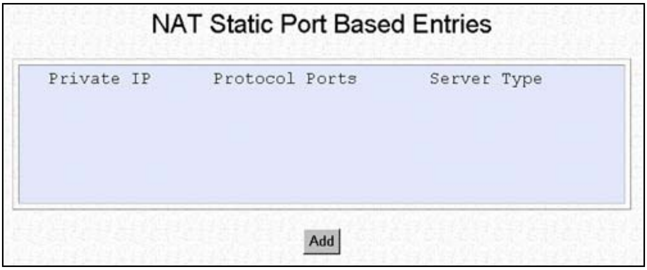
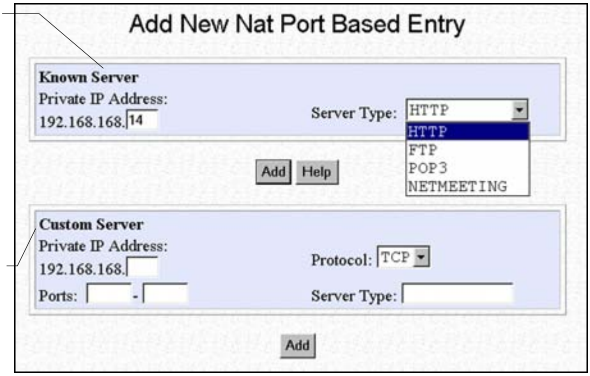


Figure 14.3b NAT Static Port Based Entries

3. Click on the “Add” button.

Known Server
It supports a pre-defined list of common Internet applications. You do not have to know which TCP/UDP port a specific Internet application is assigned to the virtual server.

Custom Server
It enables the user to define the TCP/UDP port number for the Virtual Server (of which is not supported by the Known Server)



Private IP Address: 192.168.168.14

Server Type: HTTP

Private IP Address: 192.168.168.

Protocol: TCP

Figure 14.3c Add in new Port Based Entry

4. Enter the information, for example:
   Private IP Address:192.168.168.14
   Server Type: HTTP

5. Click on the “Add” button to add the address into the Port-based mapping table.

If you require assigning more PCs in your LAN as servers, use the “Add” button to define the port-forwarding virtual server.

To utilize NAT, you have to enter the Private IP Address of the Virtual Server and the Server Type (e.g. HTTP).

For those Internet applications not defined in the Known Server, you will have to enter Port in the Custom Server (the port number for TCP/UDP port used by this Virtual Server). You can also assign a name to this Virtual Server in the Server Type field. Choose a Protocol for this Virtual Server ports. (e.g. TCP or UDP).

By clicking on the “Add” button at the Add New Port Based Entry, you have added a new Virtual port.

If you wish to delete any of the entry, just select that particular entry and hit the “Delete” key on the keyboard.

Chapter 15 Routing

15.1 Configuring Routing Protocol

You can configure Compex WP11B+ to either Dynamic or Static Routing Protocol.

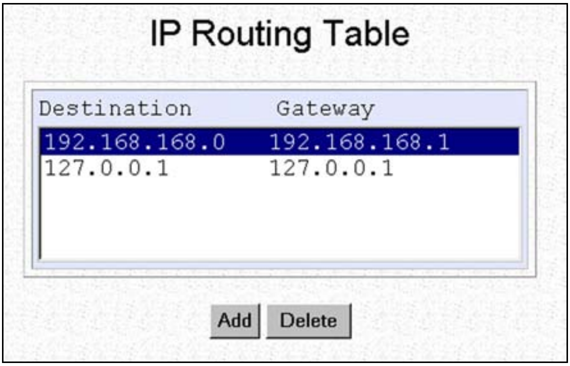
In dynamic routing, RIP1 and RIP2 will be chosen when there are multiple routes on your network. The broadband Internet Gateway will keep on updating its IP routing table with the latest routing information by automatically adjusting to any physical changes in the network connection.

The routing table contains the network path and status information, which is used for forwarding the information. The Routing Information Protocol (RIP) will receive the routing information from other routers on the network.

15.2 Adding Static Routes

If you already have existing multiple routers in your network and have multiple kinds of networks in your LAN, you may need to set up a static route between them to avoid the hassle of reconfigurating to the network. In this way, you can also have better control over the routes of your Compex WP11B+. For such cases, you can add a Static Routing to the router.

1. Click on **Routing.** Click on the “Add” button to add the Static Route in the **IP Routing Table** configuration shown.



IP Routing Table

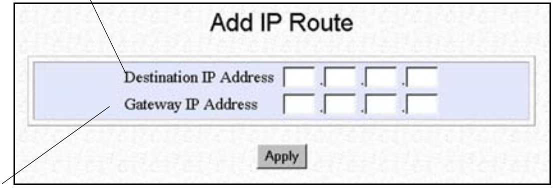
Destination	Gateway
192.168.168.0	192.168.168.1
127.0.0.1	127.0.0.1

Figure 15.2a IP Routing Table

You will set the desired Destination IP Address and the Gateway IP Address.

2. Click "Apply" button to save your changes. You need to save and reboot your gateway.

Destination IP Address
A remote network IP address to which you want to assign the static route. For example, if you want to route your WP11B+ to your entire LAN, you may enter the IP address as 192.168.168.0.



Gateway IP
The IP address that provides the gateway between Compex WP11B+ and the remote network.

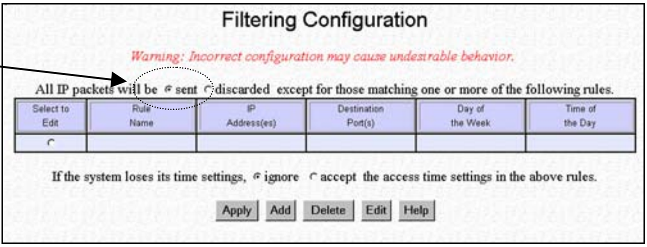
Figure 15.2b Adding Static IP Routing

Chapter 16 Packet Filtering

16.1 Filtering

Compex WP11B+ allows Packet Filtering rules to be defined based on three factors, Source IP Address, TCP Port and Time. IP Packet Filtering examines the outgoing packets and decides whether to bypass or to block them. After the Packet Filtering rules have been defined, the users may select to bypass or to block the outgoing packets that do not match the rules.

Select on this radio button



Filtering Configuration

Warning: Incorrect configuration may cause undesirable behavior.

All IP packets will be ● sent ○ discarded except for those matching one or more of the following rules.

Select to Edit	Rule Name	IP Address(es)	Destination Port(s)	Day of the Week	Time of the Day
○					

If the system loses its time settings, ● ignore ○ accept the access time settings in the above rules.

Figure 16.1a Adding Filtering Configuration

For example, assume that a rule has been defined as "TCP Port 23 (used by TELNET) from any IP on any day at any time". If the “sent” radio button is selected, all outgoing packets will be sent except TELNET session. If the discarded radio button is selected, all outgoing packets will be blocked except TELNET session.

Click on **IP Filtering** function at the Command window.

To add a new rule

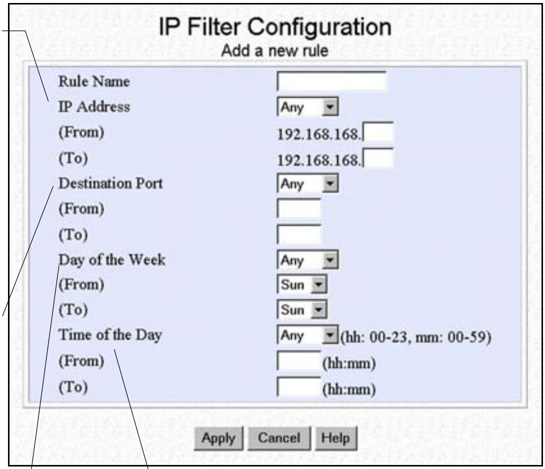
1. Press “Add” button.

The screen facilitates the users to add rules for IP Packet Filtering.

IP Address
Three values are possible for this field: **Any**, **Range** or **Single**. If you have selected **Any**, you may leave the next two fields blank. If you have selected **Range**, enter the range of IP addresses in (From) and (To) fields. If you have selected **Single**, you only need to enter the specific source IP address in the (From) field

Destination Port
Three values are possible for this field, **Any**, **Range** or **Single**. If you have selected **Any**, you may leave the next two fields blank. If you have selected **Range**, enter the range of TCP port in (From) and (To) fields. If you have selected **Single**, you only need to enter the specific TCP port in the (From) field.

Day of the Week
Two values are possible for this field, **Any** or **Range**. If you have selected **Any**, you may leave the next two fields blank. If you have selected **Range**, enter the duration of the weekdays in (From) and (To) fields.



IP Filter Configuration
Add a new rule

Rule Name	
IP Address	Any
(From)	192.168.168.
(To)	192.168.168.
Destination Port	Any
(From)	
(To)	
Day of the Week	Any
(From)	Sun
(To)	Sun
Time of the Day	Any (hh: 00-23, mm: 00-59)
(From)	(hh:mm)
(To)	(hh:mm)

Time of the Day
Two values are possible for this field, **Any** or **Range**. If you have selected **Any**, you may leave the next two fields blank. If you have selected **Range**, enter the time in (From) and (To) fields.

Figure 16.1b IP Filtering Configuration

2. Enter the appropriate data in the respective entries for **Rule Name**, **IP Address**, **Destination Port**, **Day of the Week** and **Time of the Day**.

3. Press the “Apply” button to add the new rule or “Cancel” button to discard the rule.

4. To save the rules, click the **Save or Reset Settings** at the Command window under the **SYSTEM TOOLS** Menu.

To delete a rule

1. Select the required rule on the **Select to Edit** column.
2. Click on **Delete** to activate the action.

To edit a rule

1. Select the required rule on the **Select to Edit** column.
2. Click on “Edit” button to activate the action,
3. Click “Apply” button to accept the rule or “cancel” button to discard the rule.
4. To save the rules, click the **Save or Reset Settings** at the Command window on **SYSTEM TOOLS** menu.

CAUTION
You must synchronize the clock of Compex WP11B+ to your PC’s time for the rules to execute accurately.

Refer to **“Set System Time”** to utilize the timing based function of Compex WP11B+.

Chapter 17 Remote Management

17.1 Remote Management

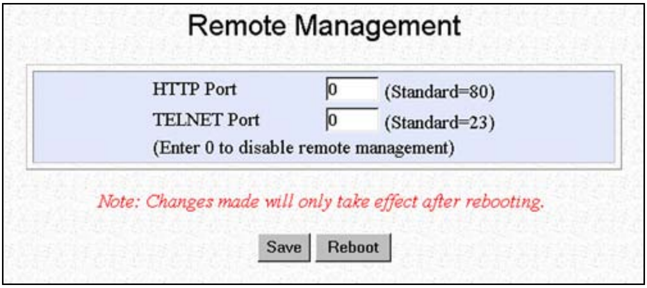
The Remote Management feature is a useful function for those people who work from home or sales personnel who are mostly away from the office. As long you have Internet access at your Remote site, you can still manage your network.

To enable remote management,

1. Select **Remote management** at the Command window.

2. Enter the information, for example:

   HTTP Port: 80
   TELNET Port: 23



Remote Management

HTTP Port 0 (Standard=80)
TELNET Port 0 (Standard=23)
(Enter 0 to disable remote management)

Note: Changes made will only take effect after rebooting.

Figure 17.1a Remote management

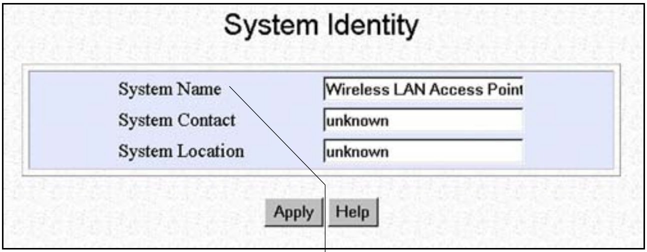
3. Click on the “Save” and reboot the Compex WP11B+.

Chapter 18 Using SYSTEM TOOLS menu

18.1 System Identity

If you have multiple Compex WP11B+s in your network, it will be useful if you define the respective Compex WP11B+ identities for ease of identification.

In some cases, your ISP may require you to define a **System Name** before you can access the Internet. The **System Name** is also used as a DHCP Client ID in negotiation with a DHCP Server for IP release. All these can be defined in the **System Identity.**



System Identity

System Name: Wireless LAN Access Point
System Contact: unknown
System Location: unknown

System Name
This parameter is used as a DHCP Client ID in negotiation with a DHCP Server for IP leased. Certain Cable ISPs, such as Optus@Home in Australia and Excite@Home in the United States, require DHCP Client ID to be authenticated first before leasing out an IP address.

Figure 18.1a System Identity Description

To do so,

1. Go to **System Identity** at the Command window.

2. Description on the **System Name**, **System Contact** (You may enter the contact person for the Gateway in this field) and **System Location** (If there are multiple Gateways in the network or building, you may enter a location to identify the Gateway.)

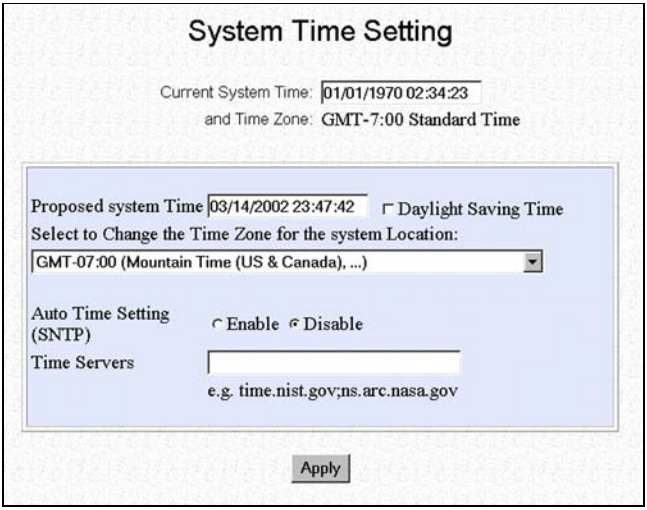
3. Press “Apply” button to effect the changes.

18.2 Set System Time

It is recommended that you configure the Compex WP11B+'s timer to synchronize with your PC so that you can utilize the time-based functions.

NOTE
To manage and utilize the time-based functions provided in the Compex WP11B+, (such as the Filtering functions), you MUST set its clock to synchronize with your managing workstation.

1. Access the **SYSTEM TOOLS** menu and click on the **Set System's Clock**.
2. Select the appropriate time zone from the pull down menu. Next, click on the "Apply" button.



System Time Setting

Current System Time: 01/01/1970 02:34:23
and Time Zone: GMT-7:00 Standard Time

Proposed system Time 03/14/2002 23:47:42 ☐ Daylight Saving Time
Select to Change the Time Zone for the system Location:
GMT-07:00 (Mountain Time (US & Canada), ...)

Auto Time Setting (SNTP) ○ Enable ● Disable
Time Servers
e.g. time.nist.gov;ns.arc.nasa.gov

Figure 18.2a Synchronizing Compex WP11B+'s timer

18.3 Firmware Upgrade

You can download the new Firmware upgrade from **http://www.compex.com.sg** for the latest firmware revision. Here, you can download all future release of updated Firmware by simply clicking on the links.

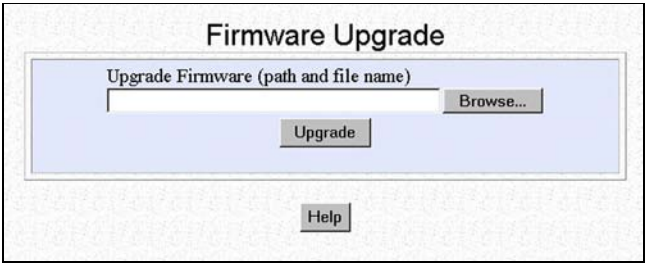


Figure 18.3a To upgrade Firmware

To perform the upgrade,

1. Click on Firmware Upgrade.
2. Click on the “Browse” button to locate the filename. Next, click on the “Upgrade” button to begin the upgrading to the latest firmware revision.

Follow through the instructions during the upgrading process. Once completed, remember to reboot Compex WP11B+ and login again to proceed with any configurations.

NOTE

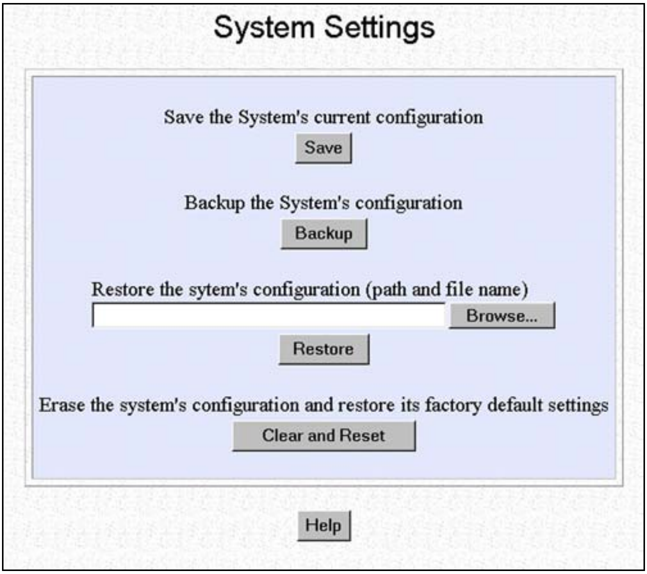
NOTE
The firmware image file that you install from the CD-ROM may not be the latest version. To get the most updated version, please go to **www.compex.com.sg or www.cpx.com** to download the firmware.

To check your current firmware revision, click on the **About System** in the **HELP** menu.

18.4 Save or Reset Settings

This function allows the users to perform tasks on the configuration settings. You may save the configuration that you have made to the Compex WP11B+, backup the configuration on a file, restore the configuration from a file and reset the configuration back to factory default.

The **Save and Reset Settings** allows you to execute the changes or reset the Compex WP11B+ back to the default configuration.


System Settings

Save the System's current configuration

Backup the System's configuration

Restore the sytem's configuration (path and file name)

Erase the system's configuration and restore its factory default settings

Figure 18.4a Save and Reset Settings options

To Save

1. Click on the “Save” button to update all changes you have made previously.

2. Reboot Compex WP11B+ to ensure that it points to the right profile and logon again.

To Backup

To backup Compex WP11B+'s configuration into a file, click on the "Backup" button.

To Restore

Click on the "Restore" button to restore the old configuration from your backup file.

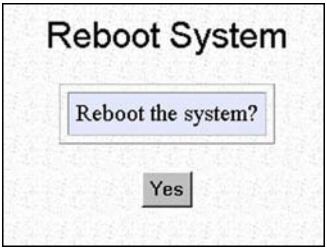
To Clear and Reset your setting

By clicking on this button, you will restore Compex WP11B+ back to the default settings. This includes disabling the DHCP Server. You will have to re-enter all the configuration information for your network.

18.5 Reboot System

You can reboot the device by clicking on the **Reboot System** menu. Most of the changes require you to reboot your Compex WP11B+ in order for the new settings to take effect.

Click "Reboot System" button and then the "Yes" button.



Reboot the system?

Figure 18.5a Reboot System

18.6 Change Password

This option allows the System Administrator to amend the current password. The default password is **password**. This password is being used for the web-based configuration interface as well as in the Telnet session.

NOTE
Administrative password is case sensitive and only ONE password is Needed for all the interfaces.

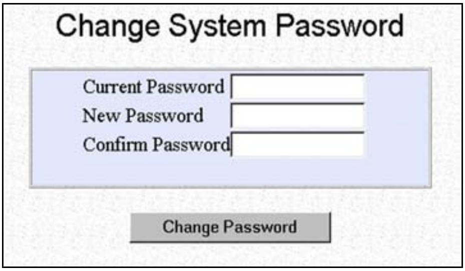


Figure 18.6a Changing of Password

1. Click on **Change Password** at the Command window and key in the entries accordingly.

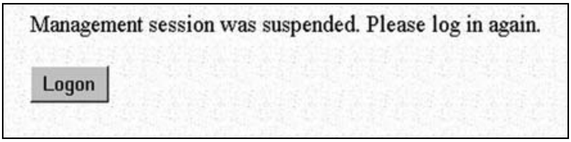
2. Click on the “Change Password” button to confirm changes.

3. Then click on the “Save & Reboot” button to activate the changes.

If you forget your password, simply reset Compex WP11B+. The password will reset back to default, which is *password*. Please note that upon resetting the device, all configurations will be back at the default settings.

18.7 Logout

With the web browser, logging out has never been easier. Simply click on the “Logout” button and you will exit the web-based environment. The system will prompt you to log in again as shown in Figure 18.7a. If you need access to the Compex WP11B+ Configuration again, please activate **uConfig** program again, regardless which mode you may have previously worked in.



Management session was suspended. Please log in again.

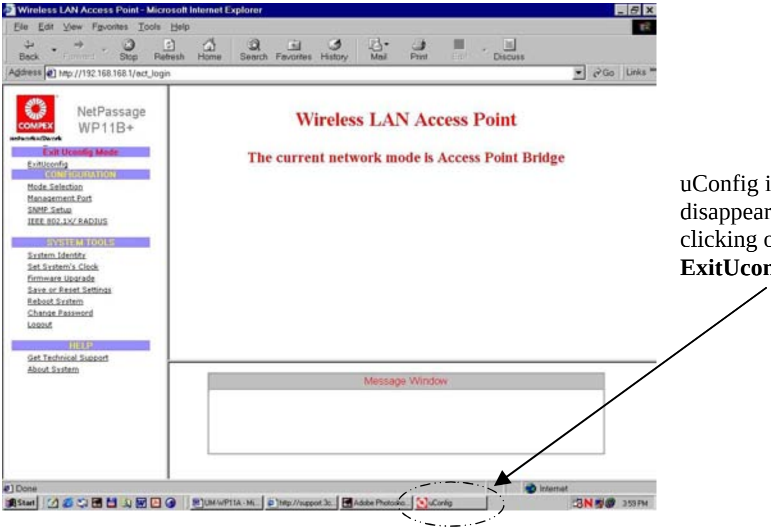
Figure 18.7a System prompt to log in again

NOTE
Do not use the Logon button, use **uConfig** program instead, to prevent any conflict in IP Address.

18.8 Exit uConfig

Upon completion of the Compex WP11B+ configuration, go to Command window and select **Exit uConfig** function. This will close the **uConfig** program. Notice the icon located at the taskbar (bottom of your screen) has vanished! This shows that you have successfully exited from **uConfig** program.

NOTE
If you need to configure Compex WP11B+ again, it is strongly recommended you activate the **uConfig** program to access the web-based interface to reduce any complication.



Wireless LAN Access Point

The current network mode is Access Point Bridge

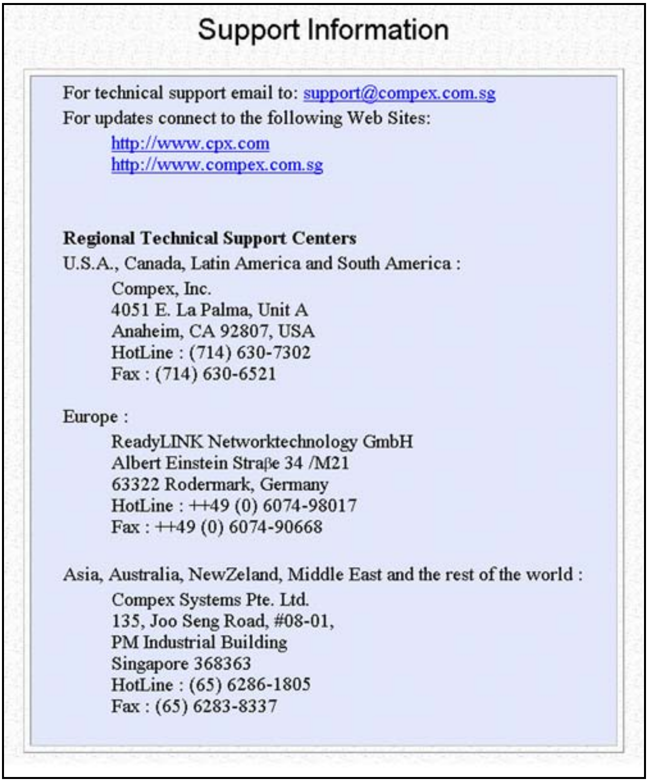
uConfig icon will disappear after clicking on the **ExitUconfig** bar.

Figure 18.8a uConfig icon at the taskbar

Chapter 19 Using HELP menu

19.1 Get Technical Help

For more information on Compex’s technical support around the world, click on the **Get Technical Support** in the **HELP** Menu.



Support Information

For technical support email to: support@compex.com.sg

For updates connect to the following Web Sites:

http://www.cpx.com
http://www.compex.com.sg

Regional Technical Support Centers

U.S.A., Canada, Latin America and South America :

Compex, Inc.
4051 E. La Palma, Unit A
Anaheim, CA 92807, USA
HotLine : (714) 630-7302
Fax : (714) 630-6521

Europe :

ReadyLINK Networktechnology GmbH
Albert Einstein Straβe 34 /M21
63322 Rodermark, Germany
HotLine : ++49 (0) 6074-98017
Fax : ++49 (0) 6074-90668

Asia, Australia, NewZeland, Middle East and the rest of the world :

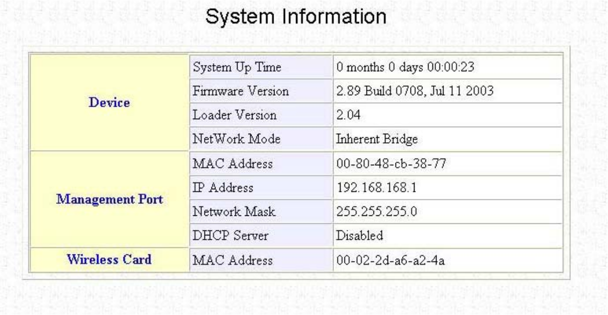
Compex Systems Pte. Ltd.
135, Joo Seng Road, #08-01,
PM Industrial Building
Singapore 368363
HotLine : (65) 6286-1805
Fax : (65) 6283-8337

Figure 19.1a Technical Support Information

19.2 About System

You can check the various configuration of the Compex WP11B+ by clicking on the **About System** menu. After you have upgraded your firmware in the Compex WP11B+, you can check for the version.

19.2.1 AP Bridge/AP Client/Wireless Bridge Link Mode

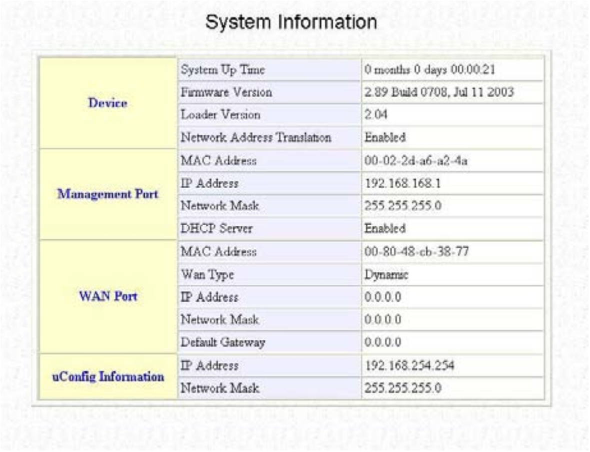


System Information

Device	System Up Time	0 months 0 days 00:00:23
	Firmware Version	2.89 Build 0708, Jul 11 2003
	Loader Version	2.04
	NetWork Mode	Inherent Bridge
Management Port	MAC Address	00-80-48-cb-38-77
	IP Address	192.168.168.1
	Network Mask	255.255.255.0
	DHCP Server	Disabled
Wireless Card	MAC Address	00-02-2d-a6-a2-4a

Figure 19.2a Bridge/Client Mode System Information

19.2.2 Gateway Mode



System Information

Device	System Up Time	0 months 0 days 00:00:21
	Firmware Version	2.89 Build 0708, Jul 11 2003
	Loader Version	2.04
	Network Address Translation	Enabled
Management Port	MAC Address	00-02-2d-a6-a2-4a
	IP Address	192.168.168.1
	Network Mask	255.255.255.0
	DHCP Server	Enabled
WAN Port	MAC Address	00-80-48-cb-38-77
	Wan Type	Dynamic
	IP Address	0.0.0.0
	Network Mask	0.0.0.0
	Default Gateway	0.0.0.0
uConfig Information	IP Address	192.168.254.254
	Network Mask	255.255.255.0

Figure 19.2b System Information

Chapter 20 Hardware Reset of Compex WP11B+

The Compex WP11B+ is designed with a reset button located at the back of the cover. This facilitates the resetting of the Compex WP11B+ to factory default settings, or to switch between the work modes of Compex WP11B+. The reset push button functions in the three ways:

	Functions of reset button	**Procedures**
◆	Recycle Power (Reboot)	Hold and immediately release the reset button. The DIAG LED will blink once and then lighted up for a while.
◆	Set to factory default	Hold the reset button until the DIAG LED flashes at the rate of 1 flash/sec. Release the button and the DIAG LED will light up shortly. The AP Mode LED will then light up steadily, indicates that Compex WP11B+ has set to its factory default setting as shown below: ● Operating Mode: ***AP Bridge mode*** ● IP address: ***192.168.168.1*** ● Password: ***password*** ● DHCP Server mode: ***Disabled***
◆	Toggling between the operating modes	Hold the reset button until the DIAG LED blinks at the rate of 2 flashes/sec. Release the button and Compex WP11B+ will start toggling between the following operating modes: ◆ If you are in **Access Point Bridge** mode, the WP11B+ will change to **Gateway** mode. The AP Mode LED will be turned off and the DHCP server mode will be enabled. ◆ If you are in **Gateway/Wireless Routing Client** mode, the device will switch to **Access Point Bridge** mode. The AP Mode LED will be turned on and the DHCP server mode will be disabled. ◆ If you are in **Access Point Client** mode, the device will be switched back to **Access Point Bridge** mode.

Chapter 20 Hardware Reset of Compex WP11B+

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Appendix I Login to Web-based Interface manually

AI-1 Configuration of Compex WP11B+ using Web-based Interface

Another method of logging to web-based interface is to key in the IP Address manually. This is quite tedious as the default IP Address for AP Bridge/Client Mode is different from Gateway You need to configure your PC’s IP Address whenever you switch the working mode. The IP Address of your PC must be configured as the same subnet as Compex WP11B+.

To install a browser on the PC or workstation, make sure that TCP/IP protocol is installed and configured. Configuration will be much simpler. If you decided to obtain the IP address dynamically and use default IP addresses. Compex WP11B+ comes with a built-in DHCP server that automatically assigns IP addresses, DNS and Gateway information to the computers connected in the same network. It has been pre-configured with IP address and Subnet Mask of 192.168.168.1 (for AP Bridge and AP Client mode) and 255.255.255.0 respectively.

An Internet browser can be used to configure the Compex WP11B+. The most commonly used browsers include the latest Netscape Navigator, Netscape Communicator and Microsoft Internet Explorer browsers as they support frames and Java. We recommend you use Netscape Communicator V4.06 and higher, or Microsoft Internet Explorer 4.0 and higher.

Assuming that Compex WP11B+ is in its default setting, which is in the AP Bridge mode, start running your browser on a workstation connected onto the same network as the Compex WP11B+ by entering the URL address, **http://192.168.168.1**.

Login to Web Browser Interface

The following is a list of the various ways for different browsers to access a website. Follow the instructions for the browser that you use.

In Netscape Navigator

1. Select the **File** menu, then select **Open Location**.

2. In the **Open Location** dialog box, key in the IP address of the Compex WP11B+. This address is set at the factory to: http://192.168.168.1.

3. Click on the “Open” button.

Appendix I Login to Web-based Interface manually

In Netscape Communicator

1. Select the **File** menu, and then click on the **Open Page**.

2. In the **Open Page** dialog box, key in the IP address of the Compex WP11B+. This address is set at the factory to: **http://192.168.168.1**.

3. Make sure the Navigator radio button is selected. Then click the “Open” button.

In Internet Explorer

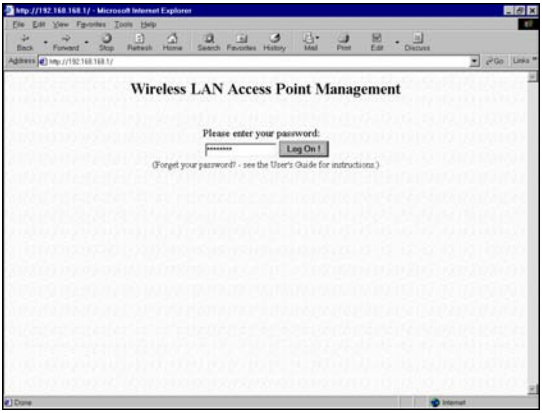
1. Select the **File** menu, then select **Open**.

2. In the **Open Page** dialog box, key in the IP address of the Compex WP11B+. This address is set at the factory to: **http://192.168.168.1**.

3. Click on the “OK” button.

The following screen is displayed next in the Web browser program (Figure A1-1):

4. Type in the password and click on the “Log On!”. The default password is “*password*”.



Wireless LAN Access Point Management

Please enter your password:

****

(Forget your password? - see the User's Guide for instructions.)

A1-1 Login to Wireless LAN Access Point Management

Now you can start configuring Compex WP11B+.

Appendix II TCP/IP Configuration

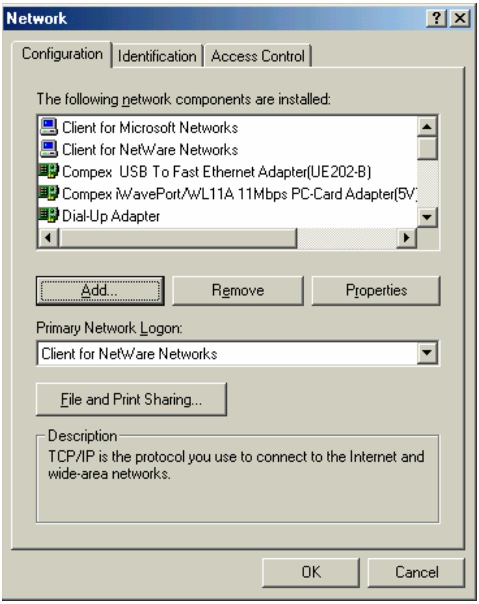
This section discusses the configuration of your TCP/IP connection of your Compex WP11B+.

Upon the successful installation of the Compex WP11B+, the network adapter will be added to your network folder. To configure your TCP/IP connection for Compex WP11B+, please follow the steps listed below. If you are using Windows 2000/XP, please go to section AII-2

AII-1 Adding TCP/IP network protocol for Windows 98/98SE/ME

1. From the Windows 98/98SE/ME, go to **Start**, select **Settings**, and then **Control Panel**.

2. Double-click on the **Network** icon and a Network screen will appear as shown:



The following network components are installed:

- Client for Microsoft Networks
- Client for NetWare Networks
- Compex USB To Fast Ethernet Adapter(UE202-B)
- Compex iWavePort/WL11A 11Mbps PC-Card Adapter(5V
- Dial-Up Adapter

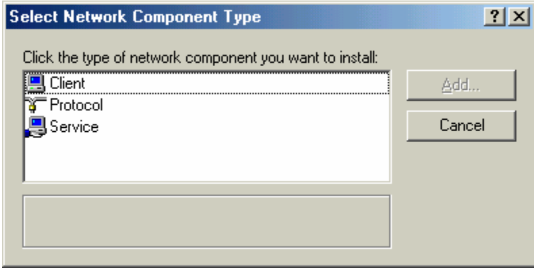
Primary Network Logon: Client for NetWare Networks

Description
TCP/IP is the protocol you use to connect to the Internet and wide-area networks.

Figure AII-1 Network Configuration

3. Check your list of Network Components in the Network window Configuration tab. If TCP/IP is not installed, click on the "Add" button to start the installation.

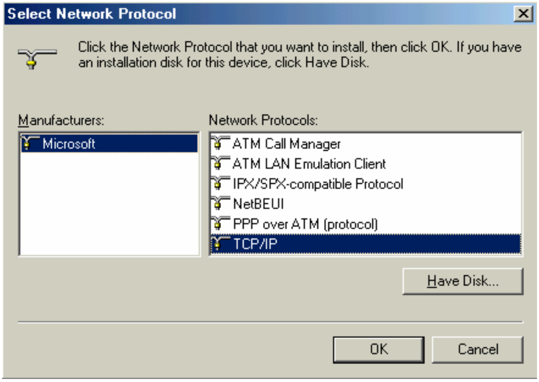
4. Select **Protocol** and click on the "Add "button.



Select Network Component Type
?
Click the type of network component you want to install:
Client
Protocol
Service
Add...
Cancel

Figure A11-2   Select Network Component Type

5. Select **Microsoft** and **TCP/IP** in Manufacturers and Network Protocols columns respectively. Click on the "OK" button.

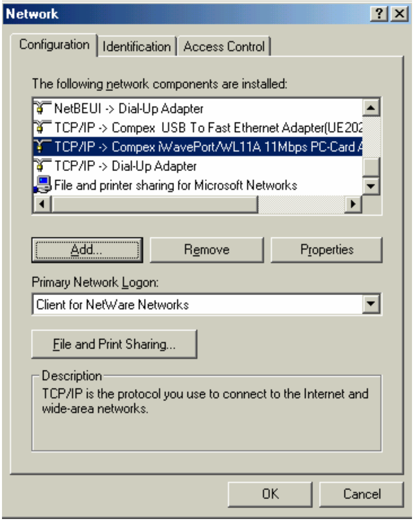


Click the Network Protocol that you want to install, then click OK. If you have an installation disk for this device, click Have Disk.

Figure AII-3   Select Network Protocol

6. After TCP/IP is installed, go back to the Network screen and select TCP/IP in the list of Network Components.

7. Click on the “Properties’ button, and configure the settings in each of the TCP/IP Properties window.



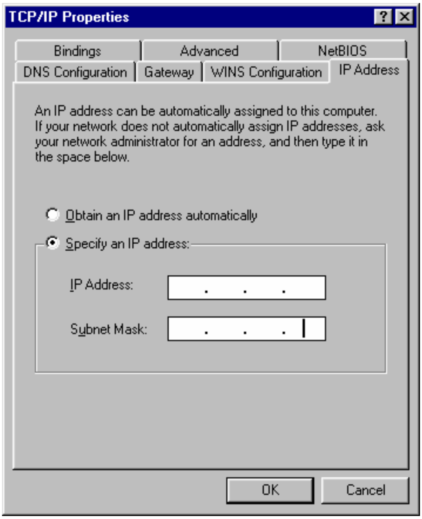
The following network components are installed:

- NetBEUI -> Dial-Up Adapter
- TCP/IP -> Compex USB To Fast Ethernet Adapter(UE202
- TCP/IP -> Compex iWavePort/WL11A 11Mbps PC-Card A
- TCP/IP -> Dial-Up Adapter
- File and printer sharing for Microsoft Networks

Primary Network Logon: Client for NetWare Networks

Description
TCP/IP is the protocol you use to connect to the Internet and wide-area networks.

Figure AII-4 Select TCP/IP protocol



An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.

○ Obtain an IP address automatically
● Specify an IP address:

IP Address: . . .
Subnet Mask: . . .

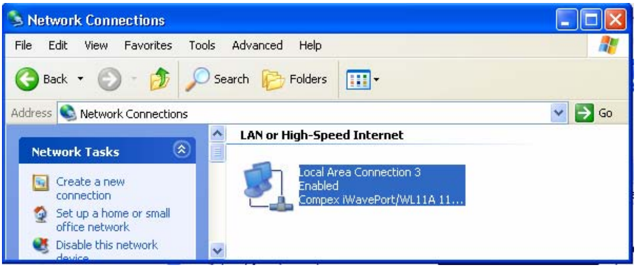
Figure AII-5 IP Address Configuration

NOTE
Please check with your system administrator or Internet Service Provider for more information on the TCP/IP parameters.

AII-2 TCP/IP network protocol configuration for Windows XP/2000

For Windows XP/2000 users, you do not need to install the TCP/IP protocol as it is already installed when you first install a network card. As such, only the configuration for TCP/IP is shown.

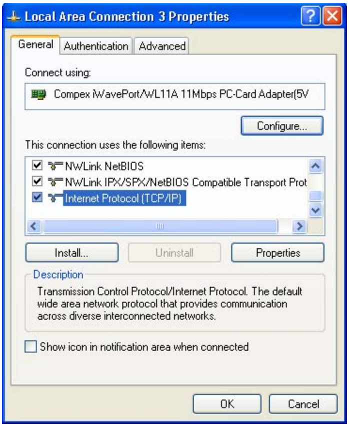
1. From the **Start** menu - click **Control Panel**, then click **Network and Internet Connections**. Then click **Network Connections** and your computer screen will change to a similar figure shown below.



Local Area Connection 3
Enabled
Compex iWavePort/WL11A 11...

Figure AII-6   Network Connections

2. Right click the network connections you want to edit and click on the "Properties" button.



Connect using:

Compex iWavePort/WL11A 11Mbps PC-Card Adapter(5V

This connection uses the following items:

☑ NWLink NetBIOS
☑ NWLink IPX/SPX/NetBIOS Compatible Transport Prot
☑ Internet Protocol (TCP/IP)

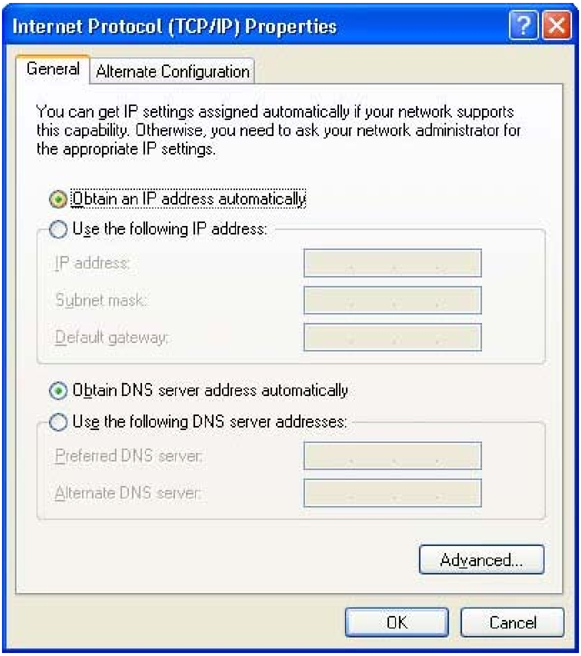
Description

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

☐ Show icon in notification area when connected

Figure AII-7   Compex WP11B+ Network Connection

3. Select the Internet Protocol (TCP/IP) item and click on the “Properties” button.



You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically

○ Use the following IP address:

IP address:

Subnet mask:

Default gateway:

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS server:

Alternate DNS server:

Figure AII-8 IP Address Configuration

4. Configure your IP address and the rest of the parameters so that you can connect to the network.

NOTE
Please check with your system administrator or Internet Service Provider for more information on the TCP/IP parameters.

Appendix III Configuration and Commands on Telnet Interface

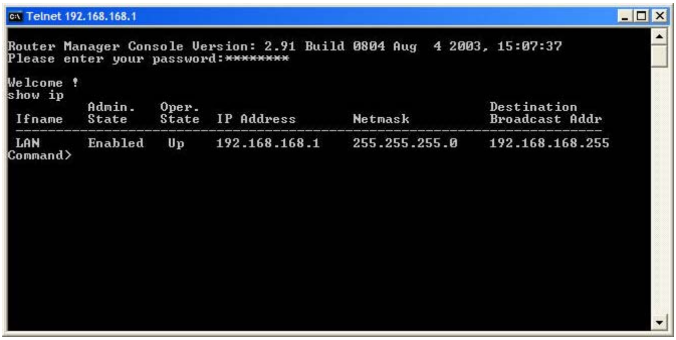
AIII-1 Telnet Interface Configuration

This feature connects the Compex WP11B+ Gateway Local LAN port to your network. You can directly connect your PC to Gateway Local LAN port, or Gateway to any hub/switch on your network.

From any PC on your network, type “Telnet 192.168.168.1”. The IP address “192.168.168.1” is the default IP address. If your network is using other IP address other than default IP address, please change the IP address in the above command.

You will see a prompt asking you for the password. Type in the password which by default is *password*. The password is case-sensitive and it is the same as the one in the Web browser interface.

Now you should see the following command prompt “Command>”



```
Router Manager Console Version: 2.91 Build 0804 Aug  4 2003, 15:07:37
Please enter your password:********

Welcome !
show ip
          Admin.   Oper.                                     Destination
 Ifname   State    State  IP Address        Netmask          Broadcast Addr
 --------------------------------------------------------------------------
 LAN      Enabled   Up    192.168.168.1     255.255.255.0    192.168.168.255
Command>
```

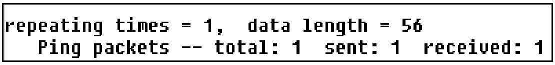
Figure AIII-1 Telnet Environment

The **Telnet Interface Command** is the same as Command Line Interface. We suggest using the **Help** command at the command prompt to guide you through these commands.

AIII-2 Command Line Interface Commands List

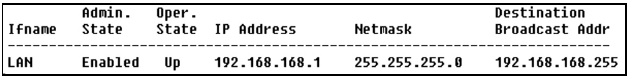
Command | **Examples**

ping <d.d.d.d>



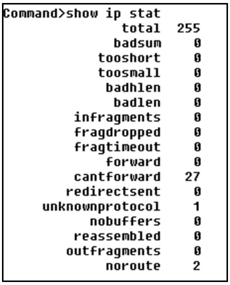
```
repeating times = 1,  data length = 56
   Ping packets -- total: 1  sent: 1  received: 1
```

show ip



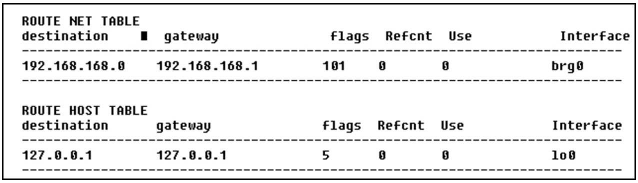
```
         Admin.   Oper.                                     Destination
Ifname   State    State   IP Address       Netmask          Broadcast Addr
--------------------------------------------------------------------------
LAN      Enabled   Up     192.168.168.1    255.255.255.0    192.168.168.255
```

show ip stat



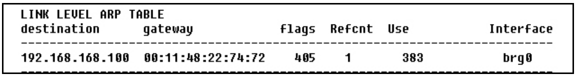
```
Command>show ip stat
               total  255
              badsum    0
            tooshort    0
            toosmall    0
             badhlen    0
              badlen    0
         infragments    0
         fragdropped    0
         fragtimeout    0
             forward    0
         cantforward   27
        redirectsent    0
     unknownprotocol    1
           nobuffers    0
         reassembled    0
        outfragments    0
             noroute    2
```

show ip routing table



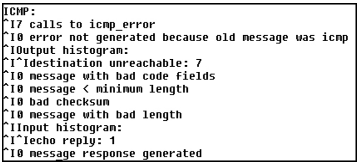
```
ROUTE NET TABLE
destination    █  gateway             flags  Refcnt  Use          Interface
---------------------------------------------------------------------------
192.168.168.0    192.168.168.1       101    0       0            brg0
---------------------------------------------------------------------------

ROUTE HOST TABLE
destination      gateway             flags  Refcnt  Use          Interface
---------------------------------------------------------------------------
127.0.0.1        127.0.0.1           5      0       0            lo0
---------------------------------------------------------------------------
```

show arp table

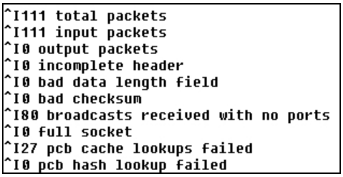
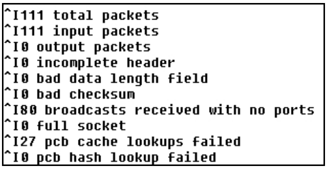
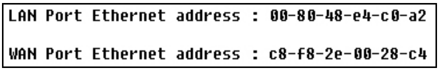
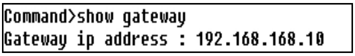
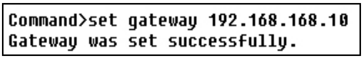


```
LINK LEVEL ARP TABLE
destination      gateway            flags  Refcnt  Use          Interface
--------------------------------------------------------------------------
192.168.168.100  00:11:48:22:74:72    405    1       383          brg0
--------------------------------------------------------------------------
```

show icmp stat



```
ICMP:
^I7 calls to icmp_error
^I0 error not generated because old message was icmp
^IOutput histogram:
^I^Idestination unreachable: 7
^I0 message with bad code fields
^I0 message < minimum length
^I0 bad checksum
^I0 message with bad length
^IInput histogram:
^I^Iecho reply: 1
^I0 message response generated
```

Command	Examples
show udp stat	 ^I111 total packets ^I111 input packets ^I0 output packets ^I0 incomplete header ^I0 bad data length field ^I0 bad checksum ^I80 broadcasts received with no ports ^I0 full socket ^I27 pcb cache lookups failed ^I0 pcb hash lookup failed
show tcp stat	 ^I111 total packets ^I111 input packets ^I0 output packets ^I0 incomplete header ^I0 bad data length field ^I0 bad checksum ^I80 broadcasts received with no ports ^I0 full socket ^I27 pcb cache lookups failed ^I0 pcb hash lookup failed
show ethernet address	 LAN Port Ethernet address : 00-80-48-e4-c0-a2 WAN Port Ethernet address : c8-f8-2e-00-28-c4
show gateway	 Command>show gateway Gateway ip address : 192.168.168.10
set gateway <d.d.d.d	 Command>set gateway 192.168.168.10 Gateway was set successfully.

There are also some other commands such as:
set ip private <d.d.d.d> <d.d.d.d>
set ip lan <d.d.d.d> <d.d.d.d>
add ip routing <d.d.d.d> <d.d.d.d>
delete ip routing <d.d.d.d> <d.d.d.d>

AIII-3 How to recover Compex WP11B+ from failed firmware

This procedure details the upgrading of firmware to Compex WP11B+.

Compex WP11B+ will automatically switch to loader mode if the main code is corrupted. Code can be corrupted due to power surges or it could be uploading newer firmware results in router failing to startup.

1. Disconnect Compex WP11B+ from the network.

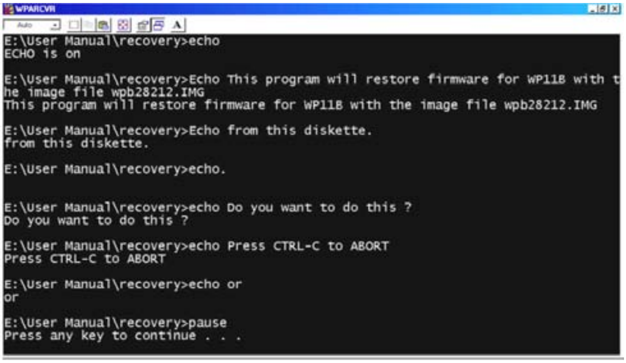
2. Connect one end of a cross-connect Ethernet cable on the WAN port of Compex WP11B+ and the other end to your PC/notebook LAN adapter.

3. Power ON the device and the PC/notebook. You will notice that the DIAG LED blinking rapidly. This indicates that the loader mode has discovered firmware error and is awaiting uploading.

4. Insert the Product CD to your CD-ROM Drive.

5. Go to Recovery folder and activate **wp11brcv.bat**.

   The system will go to DOS Prompt automatically. Press any key to restore the firmware. It will run the command from the batch file: *TFTP -i 192.168.168.1 PUT Wp11b288.img* as shown below (Note: filename Wp11b288.img is for illustration only).



```
E:\User Manual\recovery>echo
ECHO is on

E:\User Manual\recovery>Echo This program will restore firmware for WP11B with t
he image file wpb28212.IMG
This program will restore firmware for WP11B with the image file wpb28212.IMG

E:\User Manual\recovery>Echo from this diskette.
from this diskette.

E:\User Manual\recovery>echo.


E:\User Manual\recovery>echo Do you want to do this ?
Do you want to do this ?

E:\User Manual\recovery>echo Press CTRL-C to ABORT
Press CTRL-C to ABORT

E:\User Manual\recovery>echo or
or

E:\User Manual\recovery>pause
Press any key to continue . . .
```

Figure AIII-2 DOS Prompt Environment

When done, the system will prompt you a message *“Transfer successful: 505807 bytes in 1 seconds, 505887 bytes/s”*.

When the firmware image file is uploaded, it will copy it to the flashrom. During uploading the firmware image file to Compex WP11B+, the DIAG LED will light up.

NOTE

The firmware image file, which you upload from the CD-ROM may not be the latest version. To get the most updated version, please go to www.compex.com.sg to download the firmware. Do not power down the device as data is being transferred.

Please note that your firmware image file might be different. Please enter the name of that image file.

Please ensure that there is constant power supply to Compex WP11B+ while performing the recovery process.

Wait until the DIAG LED starts blinking slowly which may takes about 10 seconds. This indicates that the firmware has been loaded successfully. Power off and on to reboot Compex WP11B+.

The DIAG LED should be switched off if the main code is running well after you have powered up. Notice that the AP Mode LED will light up, indicating that Compex WP11B+ is in the default setting (AP Bridge mode).

AIII-4 If you have any problem to accessing to the Internet

Should you have any other problem accessing to the Internet we suggest you check through the following list of common solutions.

1. Make sure the Cable or ADSL modem is powered ON first followed by Compex WP11B+. The PC should be powered ON after the devices are ready.

2. Always use the cable provided with the modem.

3. For any reason that you may want to change cables note that there are many different brands of broadband modems. Depending on the model approved by your ISP, some modems use a MDI (straight-through) while others use MDIX (cross-connect) cable. Use the right cable.

4. Check PC has TCP/IP protocol installed. Check also that the TCP/IP properties are set to the following:
   - obtain IP automatically
   - Gateway has no entry
   - DNS is check on Disable DNS

   Check whether your PC has obtained an IP address and other TCP/IP properties like DNS address from the router.

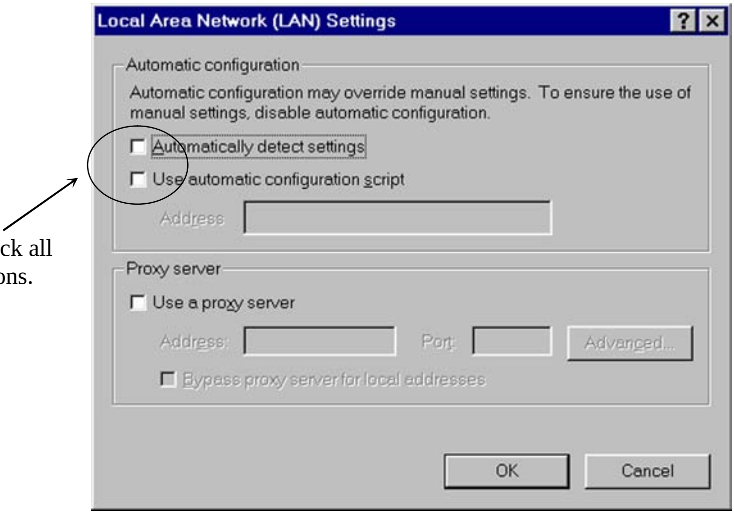
5. Click START | RUN | and type the command, **WINIPCFG** and press the "Enter" key. From the IP Configuration box, select the LAN adapter and view the IP address. It should be 192.168.168.xxx.

   Generally, the first PC to startup and connect to the gateway will have an IP address 192.168.168.100 and the next one 192.168.168.101 and so on. Obtaining an IP address indicates the PC has successfully connected to the Compex WP11B+.

   But if you have a different number like 169.xxx.xxx.xxx (xxx can be any number) it means the PC is not talking to the gateway. You should check the cable connection with Compex WP11B+ again.
   If you have the correct IP address but is still unable to connect to a Web site, then click on **More Info** button. Check the DNS Servers box. Make sure they are the correct DNS IP address from your ISP.

   From your PC to open a DOS environment and run, *PING 165.21.100.88*, or for example *PING www.cnn.com*. If you can receive replies from the PING command, it indicates the router has successfully connected to the ISP. But if you still have problems connecting with a browser, this is more likely your Internet browser configuration issue.

Check and remove any proxy setting in the Web browser application as shown:



Automatic configuration may override manual settings. To ensure the use of manual settings, disable automatic configuration.

☐ Automatically detect settings

☐ Use automatic configuration script

☐ Use a proxy server

☐ Bypass proxy server for local addresses

Uncheck all options.

Figure AIII-3 Remove Proxy server setting